

The copyright of this thesis vests in the author. No quotation from it or information derived from it is to be published without full acknowledgement of the source. The thesis is to be used for private study or non-commercial research purposes only.

Published by the University of Cape Town (UCT) in terms of the non-exclusive license granted to UCT by the author.

Misunderstandings in Fisheries

An ethnography of regulative categories and communication around
Gansbaai and Dyer Island

Sven Ragaller
(rglsve001)

A minor dissertation submitted in partial fulfillment of the requirements for the
award of the degree of Master of Social Science.

Faculty of the Humanities
Department of Social Anthropology, University of Cape Town
2012

Supervisors:
Dr Lesley Green (Social Anthropology, UCT)
A/Prof Astrid Jarre (Ma-Re Institute and Zoology, UCT)

Contents

Acknowledgements:.....	ii
List of Figures and Table:	iii
Abstract	iv
Glossary of Abbreviations:	vi
Introduction.....	1
Chapter 1:	21
The Plurality of Fishers: Gansbaai's stake in the industrial fisheries	21
Four ethnographic moments on diverse fishing practices in Gansbaai.....	24
Pre- and Post-Cooperative Fisheries in Gansbaai.....	31
Regulative Frameworks of Commercial Fisheries in South Africa	35
Chapter 2:	38
"Island Closure": a misunderstanding in terminology and intent.....	38
MPAs as part of wider management	40
The Small Pelagic Scientific Working Group in the Context of Island Closure.....	46
Chapter 3	52
Participation in an Ecosystem Approach to Fisheries.....	52
Conclusion:	64
Bibliography:	69

Acknowledgements:

My thanks to the University of Cape Town's Masters Research Scholarship. Financial support was received from the South African Research Chair in Marine Ecology and Fisheries (AJ), funded by the Department of Science and Technology and administered by the NRF. I also thank the Fishers Knowledge project funded by PERC.

Colleagues and friends in the Department of Social Anthropology have been a great source of inspiration on this journey. I am very grateful for their support and in particular would like to thank Tarryn Anderson, Greg Duggan, Kelsey Draper, Grant Fore, Jennifer Rogerson and Marieke van Zyl.

I also thank my supervisor Dr Lesley Green for her insights and work that went toward completing this dissertation. Gratitude also goes to A/Prof Astrid Jarre's unending support and guidance in supervising this work. Your frank and genuine introduction to the natural sciences and fisheries management has taught me much.

To this end this thesis takes an interdisciplinary approach to the fisheries management problem presented below. This has given me the opportunity to engage with the issues in a practical way that has meant that disciplinary anthropological approaches were not always applicable.

I thank my family and friends for listening and caring during an often selfish endeavour. You have all provided motivation and encouragement that have shaped this work.

Lastly, with greatest emphasis, thanks to the fishermen and those that took the time to listen as well as share their experiences with me. Having made room for this stranger in your daily lives takes courage, especially as a fisher in Gansbaai; I will not forget it.

List of Figures and Table:

Figure 1: Western, southern and eastern coast of South Africa. Labeled from left to right are Dassen Island, Robben Island, Cape Town, Gansbaai, Dyer Island, Port Elizabeth and St Croix Island. Adapted from GoogleMaps imagery.	2
Figure 2: The factory and the old harbour. The far left and the far right boats are part of the Gansbaai purse seining fleet.	9
Figure 3: Central Gansbaai. Holiday and retirement homes in the North; further South the main commercial area of town with the old harbor just East of that with the New harbour further South; the canning warehouse and Abalone farm are also visible. Towards the southern and south-eastern outskirts of town are the areas set aside for coloureds and blacks during Apartheid, which are now referred to as Blompark and Masakhane. This spatial segregation is still largely in place today. Adapted from GoogleMaps imagery. .	9
Figure 4: Walker Bay extending north of Gansbaai, Kleinbaai further South and Dyer Island. The black semi-circle represents the approximately 20 km extent of the possible experimental closure around Dyer Island. The White rectangle represents Figure 2. Adapted from GoogleMaps imagery.	10
Figure 5: Angling off the rocks of Walker Bay. The northern outskirts of Gansbaai's holiday homes perched on the cliffs in the background.	26
Figure 6: Purse seining involves fanning out to increase the chances of finding fish. This view of a fellow purse seiner was taken roughly an hour outside Gansbaai due West.	29
Figure 7: South Africa's 21 MPAs as of January 2012. Gansbaai indicated by red dot East of Betty's Bay MPA. Courtesy of DAFF, Recreational Fisheries Brochure.	40
Figure 8: Some of the more prominent terrestrial protected areas around Gansbaai (light green) including the Betty's Bay MPA (dark green). Created with QuantumGIS.	43
Table 1: IUCN table of protected area classifications.	44

Abstract

Fishers' engagement with the sea takes many forms. This dissertation begins by focusing on the experiences of a cohort of fishers in Gansbaai that I worked with and how their multiple ways of harvesting ocean resources have narrowed over the 20th Century. In the context of wide-spread, world-wide declines in fish stocks, such as the inshore fishery in the Benguela ecosystem along Gansbaai, fishers in Gansbaai partly rely on the availability of small pelagic fish (sardine and anchovy). However, fishers also hand-line and angle actively, and more recently practiced a range of other fishing techniques. Ten weeks of fieldwork in Gansbaai allowed the intertwined lived reality of fishers' everyday practices to come to the fore. Regulation of techniques and target species has curtailed fishers through restrictive fishing rights, quotas and more recently the rise of protected areas such as Marine Protected Areas (MPAs). This project relates the situation of Gansbaai fishers in the face of a possible experimental closure of the waters surrounding nearby Dyer Island to purse seining, proposed in support of the conservation of African penguins.

This proposition has been presented to fishers by state fisheries managers. Fishers have interpreted this as complete and permanent exclusion from the area to all types of fishing and oppose the closure. The contestation created by this is indicative of wider fisheries problems, which are characterised by a breakdown in communication.

In part, opposition to the closure lies in the long-standing and complex shape of international and national protected area discourse. Fishers in Gansbaai struggle to follow the nuances of this discussion and its implications. Another part of the opposition lies in the process of participation, which has left fishers in post-Apartheid South Africa with little benefit. Like the concept of MPAs, participation in fisheries management is well intentioned yet not without difficulties. I argue that in order to move to a situation in which fishers are seen as equal partners - as is being attempted by Ecosystems Approach to Fisheries (EAF) - participation needs to be done in very different ways. Here the work of Sarah Whatmore's (2009) "generative events" has been instructive. This approach provides the opportunity for building new ways of coming to an agreement about a problem such as the potential closure of the waters around Dyer Island to purse seining. Moving away from the position of opposing "stakeholders' interests" these events should be taken as opportunities for

establishing respect of each others' positions. Through ethnographic data from fieldwork I show the potential for such an approach even in the highly tense situation of Gansbaai. Institutional continuity and consistency are crucial if attempts at building rapport are to succeed in nurturing respect amongst fisheries and conservation management, scientists and fishers.

University of Cape Town

Glossary of Abbreviations:

CAMPFIRE – Communal Areas Management Program for Indigenous Resources

CBNRM – Community Based Natural Resource Management

DAFF – Department of Agriculture, Forestry and Fisheries (Previously MCM- Marine and Coastal Management)

DEA – Department of Environmental Affairs

EAF – Ecosystems Approach to Fisheries management

ERA – Ecological Risk Assessment

FAO – Food and Agriculture Organisation of the United Nations

MLRA – Marine Living Resources Act

MPA – Marine Protected Area

NEMA – National Environmental Management Act

NPAES – National Protected Area Expansion Strategy

PA – Protected Area

SAPFIA – South African Pelagic Fishing Industry Association

SIA – Social Impact Assessment

SWG-PEL – Small Pelagic Scientific Working Group

TAC – Total Allowable Catch

UICN – International Union for Conservation of Nature

WSSD – World Summit on Sustainable Development

WWF – World Wildlife Fund

Introduction

Gansbaai is the Cape South Coast's regional fishing centre, largely due to the small pelagic fish processing factory. The factory, with its zigzagged roof and two tall stacks, is perched on the harbour wall ready to receive the ocean's bounty. The boats, purse seine vessels are used to target small pelagic fish, which in southern Africa are almost exclusively sardine and anchovy. The factory processes anchovy into fishmeal and cans sardines. It is a fascinating process to follow the fish from the cold oceanic waters to the cans and bags they are later filled into. *Ideally* the skippers want to fill their boats to the brim, offloading catches of a few hundred tonnes per boat. However, over the couple of months spent in Gansbaai during 2010 it became clear that fishing rarely was ideal. There were few opportunities to venture out during the stormy winter months. On those occasions when they did go out to sea, the fleet of eight boats only came back with small catches, if any. Fishermen were frustrated at not being able to go out to sea due to a combination of inclement weather dwindling fish quota and the lack of availability of sardines and anchovy. As I will show later, being 'land-locked', for some fishermen is something they experience more often than they are used to and it makes them uneasy. It raises interesting questions about the experience of dwindling line-fish populations and the apparent difficulty to fish sardine and anchovy. Their experience of "resource scarcity" takes on a certain form as it is constituted through numerous instances of curtailment. For the men I worked with going out to sea means meeting the prospect of a catch. It requires hard, physical work and long hours that often extend through the night. It does also mean a job and a salary – a livelihood.

Yet what exactly does this livelihood entail for fishers? This question is especially pertinent in the context of fishers' opposition to the possible experimental closure of the waters surrounding nearby Dyer Island (see Figure 1). Such a closure is similar to the ones already placed around Dassen and St. Croix Islands (see Figure 2). The purpose is to establish the efficacy of island closures in bolstering declining African Penguin¹ population. Both the fishers and penguins are after small pelagic fish. The initial closure of the other two islands has been part of a feasibility study and has come about through the work between scientists and state fisheries managers. This means that purse seine fishing could potentially be stopped for the period of the study (and potentially thereafter if deemed necessary) within a 20 kilometre radius around the island (see

¹ The penguins are listed on the International Union for Conservation of Nature (IUCN) red list as an endangered species. I return to the implications of this status specifically in Chapter 2.

Figure 4 on page 10).



Figure 1: Western, southern and eastern coast of South Africa. Labeled from left to right are Dassen Island, Robben Island, Cape Town, Gansbaai, Dyer Island, Port Elizabeth and St Croix Island. Adapted from GoogleMaps imagery.

The experimental closure of Dyer Island needs to be understood in relation to the wider context of changes that have occurred in the fisheries and the African Penguin population. The latter has seen a drastic drop in population numbers since the beginning of the 20th Century such that only four crucial breeding colonies remain². More recently the penguin numbers have continued to drop although it is unclear why. Seabird scientists suspect that the birds are under pressure by having to compete with small pelagic fishers for food. In combination with this a recent shift in the concentration of the sardine population eastward to just outside Gansbaai, Walker Bay and Hermanus area (Fairweather et al., 2006; Howard et al, 2007; Coetzee et al, 2010), possibly due to an altered environment (Roy et al. 2007), meant that penguin colonies have had to adapt their foraging ranges. In some cases the location of breeding colonies and the location of prey have changed such that penguins are no longer within the needed foraging range which has translated into a drop in penguin numbers. While sardines are now closer to some other colonies, such as Dyer, there has been no increase in the number of penguins at Dyer. Competition for small pelagic fish between fishers and penguins is the main reasoning behind the initial experimental closures of Dassen and St. Croix, which subsequently showed an increase in the penguin population. However, scientists still feel that further studies of the effects of island closures

² Details of the drop in the penguin population are given in chapter two that also explains the cause.

need to be carried out by gathering more data and thus reducing uncertainty and inconclusive results.

Fishers in Gansbaai oppose the potential closure of part of the fishing grounds they frequent. For fishers it is yet another instance of the regulative role of the state, which has gradually encroached on their fishing practice over the last half-century in particular. For fishers the possible experimental closure is understood as a potential MPA (Marine Protected Area). Over the last two decades MPAs have been proclaimed all along the South African coast in response to the legislative framework developed post-1994. Along with MPAs are a number of marine reserves or coastal nature reserves. Fishers feel powerless and ignored in the 'participatory' processes that formed part of the declaration of these areas. For them the possible experimental closure is effectively another reserve which excludes them. The relationship between fisheries management, represented by the Department of Agriculture Forestry and Fisheries (DAFF) and the consulting scientists, and fishers is by and large in a deadlock. While the intricacies of the mistrust and miscommunication in the industry are the focus of chapters one and two it needs to be noted here that it is widely recognised and well documented that fishers and fisheries management are not on good terms in South Africa as well as in many places across the globe³. I shall return to the issue of the relationship between fishers, fisheries management and scientists later in this introduction as I would first like to take Gansbaai into consideration. The seemingly intractable situation in official terms has a decidedly optimistic feel to it in Gansbaai, as my first few days showed.

I began fieldwork in Gansbaai in June 2010 and had imagined 'the field' to have a bustling fishing harbour as a daily reference point. In other words: a place with ample opportunities to get to know fishers. However, the harbour I encountered in those first few days was quiet, almost abandoned. The vast concrete slopes leading down to the slipway and the narrow road to the factory were all empty besides the occasional distant car or person fleeing by. The town was still a largely unfamiliar place and I reassured myself that there would be plenty of people to speak to. After all, I could just have missed the fishers on their way out to sea. I realised that at the entrance to the harbour, just past the unmanned gate house, in an unmarked red-roofed

³ Bjorn Hersoug (1998) documents some the early problems arising from new redistributive and fishing legislation in South Africa. Some international examples include: Finlayson (1994) who tracks the emergence of what caused mistrust in the northern Newfoundland cod stock; see also Barbara Neis and Lawrence Felt's (2000) as well as Rosemary Ommer's (2007) work on the same area, which I return to later; Stale Knudsen (2009) deals with mistrust and miscommunication in his book on fishers, fisheries scientists and managers in Turkey; and Hoepe (2007) explores local knowledge of small-scale fishers and their mistrust toward the state in light of commercial scale over-fishing in south India.

house were the offices of the harbour's DAFF. Having worked for another part of government, a three hour drive from here in Cape Town⁴ in 2009, I was reminded that these offices should be staffed from Monday to Friday from seven thirty in the morning to four o'clock in the afternoon at least. The regulative role of government in fisheries alluded to earlier, meant that the people working in these offices would be familiar with the ebb and flow of activity in the harbour and along the coast in general.

While walking up the drive way to the house I was acutely aware that this would make DAFF my first point of contact in this small town as I had no prior relationships established. The risk of being identified by fishers as affiliated or employed by DAFF was likely. My concern was not due to an aversion towards DAFF officials. Rather it was something to take into account in the context of the tensions in South African fisheries, where quota allocation and fishing rights have become contentious issues in a maelstrom of interests. These have in more recent formulations become dichotomized into livelihoods versus ecological sustainability⁵. Furthermore, the surveillance-like role DAFF officials occupy across the coast and in particular at harbours such as Gansbaai contributed to my concern. What seemed to be a completely polarized debate between fishers on the one hand and DAFF and scientists on the other required careful treading to avoid being lumped under one or another 'side'. This draws the wider fisheries problems in from the national (and indeed international) policy debates to the local expression of the problems.

As I reached the top of the drive way a young man walked out of the front door, squinting as his eyes adjusted to the bright sunlight and simultaneously reached out to greet me with a warm hand shake. Masebhuke⁶ occupies a junior position in the harbour office where we spent the morning conversing about DAFF and some of the nuts and bolts of government regulations related to fishing. Besides this he also studies environmental management, which gave us plenty to speak about considering the focus of my own fieldwork. Indeed, he had a keen interest in my research as I began relating the core of it. This is when he wanted to introduce me to Bernd, a skipper of one of the purse seine vessels in Gansbaai. Masebhuke scratched around in his drawer for a piece of paper, then paged through his diary until eventually he found Bernd's telephone number in the contacts list of his cell phone. Bernd has been fishing his entire life and

⁴ I worked at an urban nature reserve that is managed by the City of Cape Town's Environmental Resource Management Department and was in charge of social development.

⁵ See chapter two on stakeholders and participation for a more explicit explanation.

⁶ Not his real name. I have used pseudonyms throughout and where necessary also withheld other identifying characteristics such as job title or relations to other people. The tensions in fisheries mean that this precaution is necessary to protect not only the individuals but also the wider relationships among fishers, managers and scientists.

has been a purse seine and hand-line skipper for decades. The two have known each other for a couple of years. They help each other out through their respective knowledge of fishing and DAFF. Masebhuke, recollected how Bernd helped him with a project for his studies that required detailed understanding of fish species and their availability. The young man clearly considered Bernd a good source of knowledge as he was adamant about introducing us. A few minutes later the three of us were standing at the fence of the harbour - Bernd on the outside, Masebhuke and I on the inside. Bernd was a bit confused and uncertain of Masebhuke's introduction of my research intentions but waved me over with a swing of his arm and invited me for a cup of coffee. It was equally baffling and inspiring to see two people from supposedly opposing sides of the fishing industry with an ongoing relationship. While I by no means take this as litmus for the rest of the industry, their working relationship is a hopeful counterpoint to the prevailing mistrust and breakdown in communication.

While management aims to control resource extraction, fishers try to maximise resource extraction. Through these seemingly opposing goals came the need to control resource extraction. Masebhuke spoke of the monitoring and enforcement role that he and his colleagues perform on a daily basis. These involved not only the detailed recording of what purse seine fishers brought in while ensuring that they had all the correct documentation but extended far beyond the confines of the harbour. For these purposes they had a capable off-road vehicle and a boat. These are used to patrol the coast looking for dangerously illegal activity such as abalone poaching as well as many other smaller issues. These include checking that fishers do not harvest more bait worms than allowed and that fish caught with these worms is not undersized. In short the small staff compliment of under a dozen people at the DAFF offices in Gansbaai had a massive stretch of coast under their purview and could not consistently enforce the laws intended to realise the ideals enshrined in the new legislation. Part of the problem here lies in time and temporality as officials mostly work the official hours between seven thirty in the morning and four in the afternoon. However, much fishing activity takes place outside of these hours, as I have mentioned with the example of purse seine fishers that regularly work long hours through the night. Indeed most of these fishing trips begin at four o'clock when officials have completed their work for the day. While this specific example does not pose major problems, the mismatch in time and the concomitant strain placed on fishers and the relationship between fishers and fisheries management is well documented by Jennifer Rogerson in Lamberts Bay (2011: 28) and Marieke van Zyl in her study of the fishery at Kassisbaai near Arniston (2008; for another aspect of the discussion on time-scales). Rogerson relates the mismatch in daily and seasonal working time between rock-lobster fishers in Lamberts Bay and DAFF rules, which

required fishers to operate within specific time frames. Fishers' work is dictated by the availability and seasonality of their target resource/s. Rogerson notes the frustration of fishers with the implicit expectation in the rules that the sea and fish along with fishers need to fit into a given schedule and operation procedure.

While time and temporality present one set of problems that also find their expression here in Gansbaai, there is another issue that goes to the heart of the problem around the possible closure of Dyer Island. Purse seine fishing is not the only fishing that takes place in Gansbaai. Unlike Masebhuke, Bernd tries to maximize access to the resources mainly as a purse seine skipper but up until recently also by hand-lining, beach seining and 'recreational' angling. Many of the fishers in Gansbaai rely on multiple forms of fishing as income and/or food. The slipway in the harbour is regularly awash with activity before dawn as hand-line fishers launch their ski-boats into the water. They return later to negotiate a price and sell their catch to the fish seller awaiting their return and who sell the fish on to other buyers further along. Tarryn Anderson (2011) provides a detailed ethnography also of the relationship between fish sellers and hand-line skippers in Kalk Bay. While Anderson (2011), van Zyl (2008) and Rogerson (2011) deal with fishers that almost exclusively hand-line from ski-boats and bakkie boats, fishers in Gansbaai such as Bernd and many of the purse seine fishing skippers and crew I worked with clearly had a wide repertoire of fishing practices. All of the fishers I worked with in Gansbaai referred to themselves and each other as *visserman*/fisherman. It is taken as given by them, that people draw on a wide set of practices, as did their forefathers. These multiple ways of engaging the ocean come up against the resource controlling categories of fisheries regulations and enforcement.

Sometimes the men would return from a purse seine trip in the early hours before sunrise and immediately jump onto a ski-boat with other men to go on a hand-lining trip. At other times they would grab their angling gear shortly after disembarking from the purse seine vessels and drive to the best fishing spots along the shore in search of Galjoen. This fish would be baited with worms dug up the previous morning when they did not go out to sea as the conditions for hand-lining were not ideal. This is not an exhaustive list of fishing practices but serves to illustrate the multiple forms of fishing, fishers exercise. In chapter one I come to call this the plurality of fishers, which becomes an entry point into the discussion around the categories used to control resource extraction. As I show in chapter one, fishers in Gansbaai clearly exceed these legislative categories, which cannot take into account the plurality of fishers' everyday lived experience. Along with the history of fishing activity in Gansbaai over the last century or so my aim is to offer an understanding of fishers' categorical rejection of the possible closure around Dyer

Island as part of the ongoing and seemingly inconsistent curtailing of Gansbaaiers' lives as fishers.

The quiet sea-side, holiday façade of the town hides a highly contested space in which fishers and their multiple activities are not the only ones accessing the ocean as a central part of their life. Gansbaai is a place of multifarious activities (see Figure 2 and 3). It is a harbour for fishers of many kinds, a place of immaculately maintained retirement homes and massive holiday houses. It is also a tourist destination for shark-cage diving and a hub in the illegal international trade of poached abalone. Both the tourism industry and the abalone market carry much weight, albeit in different ways, in Gansbaai. Abalone poaching, surfaced violently only days before I began fieldwork. According to one newspaper article, poachers were robbed of their abalone bounty by gangsters (IOL: May 19, 2010). "A group had then gone to the suspected gangsters' home, had allegedly attacked them and set their shack alight with them in it. Thirteen people were arrested and are expected to appear in the Gansbaai Magistrate's Court tomorrow. Twelve face double murder and arson charges" (IOL: May 19, 2010). According to a police officer they suspected the incident to be connected to the 28s gang (ibid.). Journalists were asked to leave as the situation "was too volatile" (ibid.). The 28s are one of Cape Town's largest, organized, well-known and violent gangs (Steinberg, 2004: xviii-xx). The incident also received more detailed attention in the local Gansbaai newspaper over the following weeks and cropped-up in conversations with fishers regularly.

To encounter Gansbaai for the first time through the headline: "Police warn of poaching war" (IOL: May 19, 2010) is unsettling to say the least. My research proposal made clear that I would not engage poachers directly, as the threat to my own well-being was too great considering the highly organized and often violent crime syndicates. Nonetheless whether I liked it or not, poaching imposed itself on me before I even reached Gansbaai. Indeed, prior to the incident, the biggest concern was potentially falling over board when at sea on the fishing vessels. Perhaps I should have bought a bullet proof vest instead of a life jacket.

Abalone is a sought after delicacy in the international sea food market. It is a lucrative source of income that has resulted in intense harvesting of the mollusc. Abalone is closed to harvesting in the wild to allow the species to recover from over-harvesting. Concomitantly, Gansbaai has seen the opening of one of the first abalone farms. Located a short way past the fish processing factory is the new part of the harbour where the purse-seine vessels dock along with the storage warehouse for the canned sardines. Following the little road all the way to the end reveals a

heavily fortified, fenced off area, containing the abalone farm. The farm manages to grow abalone in captivity, something that until recently had not been possible (Maritime Southern Africa, October/November 2010: 13).

On the other side of the land tongue occupied by Gansbaai, in the part of town called Kleinbaai, lies the little slip way that shuttles shark cage diving boats in and out of the rocky waters between Gansbaai and Dyer Island. The industry plays an important role in Gansbaai as it recently surpassed the fishing industry in terms of income generation for the town at an annual R275 million versus the R177 million of the fishing industry (Hara and Maharaj, 2003: 19). It is also the second biggest (by quite a margin) employer after the fishing industry. The latter employing three times as many as the *entire* tourism sector in the town (Hara and Maharaj, 2003: 17). Many of the jobs provided by shark cage diving provide better pay and are more permanent than those in fishing. At the same time shark cage diving employs mostly white people. The redistributive impetus of the post-Apartheid state aims to provide large-scale employment to Historically Disadvantaged Individuals (HDIs). In Gansbaai this means that the “black and coloured communities”⁷ provide cheap labour for both fishing and tourism. However, the tourism industry provides the low-skilled and paid positions to blacks and coloureds. Whether the employment provided by the fishing industry is better than that of tourism is not clear as the jobs offered there are plenty but temporary or part-time depending directly on the amount of catches that are processed by the factory (Hara and Maharaj, 2003).

⁷ The spatial segregation of Gansbaai rivals that of Cape Town and allows people to easily lump others into communities and secondly to do this along racial lines.



Figure 2: The factory and the old harbour. The far left and the far right boats are part of the Gansbaai purse seining fleet.



Figure 3: Central Gansbaai. Holiday and retirement homes in the North; further South the main commercial area of town with the old harbor just East of that with the New harbour further South; the canning warehouse and Abalone farm are also visible. Towards the southern and south-eastern outskirts of town are the areas set aside for coloureds and blacks during Apartheid, which are now referred to as Blompark and Masakhane. This spatial segregation is still largely in place today. Adapted from GoogleMaps imagery.

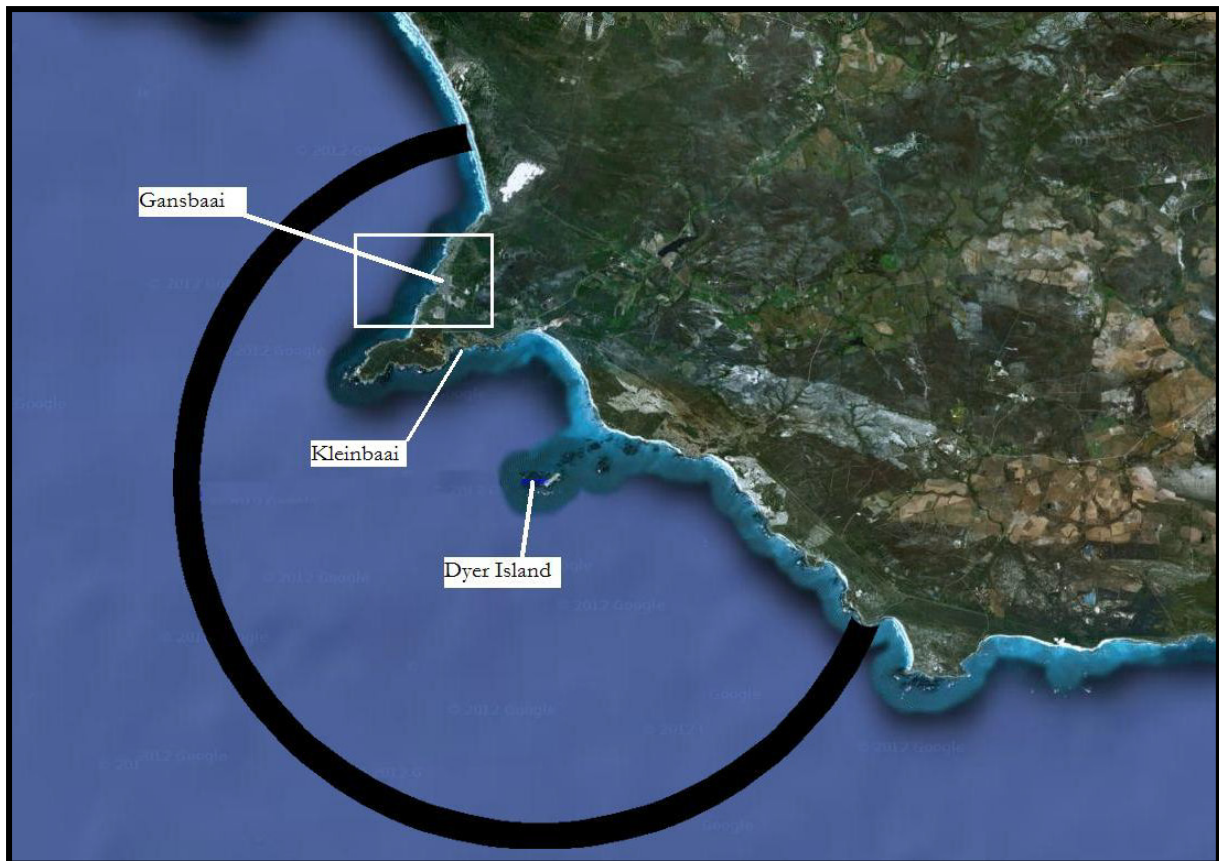


Figure 4: Walker Bay extending north of Gansbaai, Kleinbaai further South and Dyer Island. The black semi-circle represents the approximately 20 km extent of the possible experimental closure around Dyer Island. The White rectangle represents Figure 2. Adapted from GoogleMaps imagery.

The challenge shark cage diving and the tourism sector in general present to the fishing industry's long-standing centrality to Gansbaai, is a contentious point for fishers. It gradually became clear that fishers were not on good terms with the tourism industry. Some of the shark cage diving operators are on good terms with the nature conservationists in charge of Dyer Island, the Great White Sharks and African Penguins⁸. These operators have been very savvy in aligning themselves with and adopting the discourse of conservation by spinning shark cage diving as an educational exercise that raises awareness and appreciation among the public, with regard to the need to protect apex predators and mammals for the good of the wider ecosystem and by extension for us humans too. Fishers on the other hand see this alignment as one that is in principal against fishing. Fishers' at times abrasive and categorical rejection in cases of disagreement (whether from tourism or fisheries management) do not aid attempts at

⁸ The conservation authority here is Cape Nature, the provincial para-statal entrusted with the Western Cape Province's nature conservation. These are a different group of people to those involved in fisheries management through DAFF. Although both have an interest in Dyer Island through the African Penguin and this means that the Cape Nature, DAFF and the respective scientists working with them have overlapping management objectives.

constructive, diplomatic discussions for a way forward. As I come to show later, this is in response to a set of experiences that span the 20th Century and continue in different forms today still. In this tense situation fisheries managers, officials, scientists and others involved in the fishery are also at times decidedly undiplomatic and abrasive.

My first experience of fishers' animosity toward state fisheries management and scientists came as a shock to me. Early one morning shortly after having arrived in Gansbaai, I approached a group of people standing on the *koppie*⁹ above the harbour, in the hope that these were fishers. I cannot blame them for the strange looks I received when I slowly approached them and tentatively introduced myself. What I was completely unprepared for though, was the response from one of the fishers after I had explained my presence and intentions in Gansbaai: *Is jy 'n spioen? Werk jy vir die staat of so iets?* / "Are you a spy? Do you work for the government or something?" Those two sentences were devastating for me as they not only confirmed the distrust fishers had toward the state but also made clear what their opinion of me, as a university student, was. Nonetheless, I managed to build rapport with many of the fishers who frequented the *koppie*. As it turns out Kobus, who asked those damning questions, is one of the core group of fishers that with whom I spent time and built rapport.

Thus, the less than ideal relationship between fishers and fisheries managers by extension also includes conservationists and tourism. With this in mind it is clear why fishers and tourism operators are not on good terms. Some in the tourism industry spoke of fishers as obsolete and a left over vestige of a time that has past due to consistent resource scarcity, legislative and fisheries management problems.

Shortly before one of the biggest events on the Gansbaai calendar, the annual *Gansefees* (Goose festival), the issue of closing the fish factory came up again in a town meeting. The festival is a showcase to attract potential tourists and the town needs to be presented as enticingly as possible. For some this does not include the potentially pungent smell of a fish processing factory and thus every year the animosity bubbling below the surface between tourism operators and fishers flares up. Closing the factory for the long weekend of the Gansefees means that no purse seining can take place from a few days before the festival until it is over as fish needs to be processed immediately to prevent it from being spoiled. Larger steel-hulled vessels of the West Coast fleets have the ability to choose to offload their catch either on the South Coast in Gansbaai or on the West Coast. The older, wooden hulled vessels of Gansbaai fishers do not

⁹ Small hill or outcropping.

have this flexibility. This is another example of the curtailing of fishers activities. Fishers do not see the tourism industry as a legitimate part of Gansbaai. Rather it is something that is coming from elsewhere much like the international tourists it functions to attract.

This became patently clear to me one morning when I had joined some of the fishers for the usual morning meeting on the *koppie* nearby the harbour. One of the fishers was wearing a cap with the words “*Ou Gansbaaier*” stitched across the front. The phrase can be translated as “Old Gansbaaier”. In other words the person wearing the cap is a Gansbaaier, a citizen. There are a handful of these caps, which are worn by other older Gansbaaiers some of whom I had got to know quite well. There was one other version of the cap, with the phrase “*Jong Gansbaaier*”/Young Gansbaaier stitched across the front. This second version indicated fishers who had not lived in Gansbaai their whole life or who were younger family of one of the Old Gansbaaiers. I was told that these caps were explicitly for fishers and that there were not many of them. One of the fishers had had them made to raise funds for an emergency medical operation and they had now turned into prized possessions.

For fishers in Gansbaai fishing is part and parcel of what makes Gansbaai their home. Without their livelihood, fishing, Gansbaai could not be their home. The enforcement of curtailing laws mentioned earlier is an erosion of fishers’ livelihoods. Similar curtailment began at least six decades ago but has more recently been associated with the ruling ANC (African National Congress) government. It also became clear that Masebhuke, a young black man, epitomized what many fishers in Gansbaai disdainfully called “the new government”. Fishers here largely attribute the dire circumstances of the fisheries to the black government, the first instalment of which came in 1994 with the first democratic elections. The association of the post-1994 government with the declining conditions and increasing hardship in the fishing industry is in part due to the raft of legislation that arose in the half-decade after the first democratic elections.

The fisheries reform that spanned the first 15 years after Apartheid saw big changes to all fisheries. For Gansbaaiers in many cases this meant a loss of hand-line fishing rights along with curtailment of existing small pelagic TAC as more entrants entered the fishery and later were given support by being allocated an additional 25% of the entire small pelagic TAC (Hara and Raakjær, 2009: 657). This change to the small pelagic TAC was, along with the long-term rights revision, a way for the state to bring about post-Apartheid redistribution along racial lines. This kind of move angered fishers in Gansbaai who referred to this as a kind of reverse Apartheid. As Jannie said “they’re taking our quotas and rights away because we’re white”. Many fishers

agreed with this statement, which speaks to the lived reality of being denied the means to one's livelihood.

Bernd was angry about this artificial way of “redistributing” the industry. He said that “many of these [new] rights holders are not fishers” and that they had never even been to the coast. Some were from Johannesburg and inland and simply applied for fishing rights to sell them and make money. He continued “people think that because it is their right to fish they somehow can fish. But when the government gave them boats and engines they proved it. They were out of money in no time because they didn't know how to catch fish or maintain the equipment [...] and then you have [fishing] rights sitting around doing nothing when here [in Gansbaai] there are *fishermen* who are struggling”.

The fear of an MPA, which fishers express through the rejection of the potential experimental closure of Dyer Island is partially rooted in the many different and changing definitions of what constitutes an MPA. Attwood *et al* (1997: 350) notes that MPAs are widely perceived as nature reserves exclusively for the conservation of biodiversity while in reality they have a variety of applications that are determined depending on the needs of the biodiversity. MPAs are indeed used for conservation, the term is an umbrella for various roles such as sustainable utilisation, rebuilding of stocks and research/education. The former two can easily be seen as beneficial to fishers in the context of resource scarcity and uncertainty. Yet the function of individual MPAs has not always been clear. Especially those founded under the older Sea Fishery Act (1988) are particularly vague with regard to their objectives (Attwood *et al*, 1997: 342, 349-350). This improved during the 1990s when participatory approaches gained momentum. Once participatory and precautionary concepts were formally legislated under NEMA (1998) and the MLRA (1998), newly proclaimed MPAs and the management of existing ones became clearer. The institutional and legislative ‘clean-up’ means MPAs now fall under the oversight of DEA (Department of Environmental Affairs). Nonetheless, as Lemm and Attwood (2003) noted in a follow-up review on MPAs, there was still little improvement over the previous state which included very little in the way of participation. Tunley (2009), in a review of the management of South Africa's MPAs, noted that many of the MPAs including one of the two closest ones to Gansbaai, De Hoop, had very little public participation during its formation in 1985 and its re-proclamation in 2000 under the MLRA.

This ethnography of Gansbaai and the challenges around the miscommunication of the potential experimental closure of Dyer Island takes place as part of a wider discussion of fishing

both nationally and internationally. Fisheries policy and management in many parts of the world are trying to address the common problem of decline and in some cases collapse of fish stocks¹⁰. Fisheries management and sciences are contentious topics in Gansbaai as well as internationally and have become more so since the infamous Cod stock collapse in Canada during the 1980s/90s (E.g. Ommer, 2007. I discuss this in more detail shortly). One of the more salient instances in which fishers in Gansbaai made their frustrations towards fisheries science clear was when Kobus and Gerhard related their stories of research scientists.

K: *Hulle gaan net een keer die jaar see toe en dan gaan hulle op sulke [making zig-zag movements] manier die kus langs.* / They only go out to see once a year and then they travel along the coast like this [making zig-zag movements].

G: *Ja, hoe weet hulle dat dit nou die regte plek is om die vis te kry? Miskien het hulle 'n groot stuk vis nie gekry want hy érens anders is.* / Ja, how do they know that they got the right place? Maybe they missed a big piece [shoal] of fish because it is somewhere else.

K: *En sommige van hulle kan nie eers see toe gaan. Net soos jy [pointing to me in reference to my undeniable lack of sea legs that had me hanging overboard, emptying my stomach, for most of all the fishing trips I had joined them for on the purse seiners.] / And some of them can't even go out to sea. Just like you [pointing to me in reference to my undeniable lack of sea legs that had me hanging overboard, emptying my stomach, for most of all the fishing trips I had joined them for on the purse seiners.]*

G: *Ek ken 'n skipper wat so paar van hulle [scientists] see toe gery het. Hulle het hom gefra om die skuit te manage. Jy weet mos. [...] Dis easy money. Hy het vir my vertel hoe die een mannetjie net see siek was en hy was die een wat die hele tyd op die deck moes wees om die nommers te lees. Hulle het so instrument in die water en dan moet die ou die readings doen. Maar hy kon nie. Ek meen hy was die helfte van die tyd onder deck en het gekotz.* / I know a skipper who took a couple of them [scientists] out to sea. They asked him to manage the boat. You know. [...] It's easy money. He told me that the one man was constantly sea sick and he was the one doing the readings. But he couldn't. I mean, half the time he was below deck puking.

The above account shows that access to fish and resource scarcity is seen to be a result of bad

¹⁰ This is not to say that stock decline is spatially and temporally global, as Greg Duggan (2012) shows for Stilbaai. Rather that it is a problem that has repeated itself in a vast number of places increasingly since the middle of the 20th Century.

science. Fishers were not dismissive of the entire scientific endeavour; rather they were passionate about instances in which they saw scientists as having ‘got it wrong’. Indeed, Jannie, Kobus and Bernd told me that they felt science was necessary but that it must be done “properly” or as Bernd, in a later conversation mentioned, “it needs to be useful”. This is indicative of the wider – not only fishers’ – lack of communication and more precisely respect for each others’ knowledge, as I discuss later.

Part of the problem identified with the management of the Cod stock was just that: the management of a stock or target species indicative of the health of its entire biophysical system as well as the health of the fisheries. More recently the drive for an Ecosystem Approach to Fisheries (EAF)¹¹ has gained traction as a means of understanding fish stocks and the management of fisheries in ways that aim to create the institutional structures capable of avoiding situations such as the Canadian Cod stock collapse. Much of the work on the Cod stock and related fisheries examples describes these as inherently complex or “wicked problems” (Rittel and Webber, 1973)¹². These problems are inherently difficult to deal with as they touch on so many interconnected issues.

This has been a central concern for both development practitioners and scholars. Critiques of development have made this point many times over using such examples as the IMF’s structural adjustment programs that aimed to ‘develop Third World countries’ through large-scale internal restructuring that opened them up to international free trade (Bradshaw and Huang 1991; Easterly, 2003). Even before this and to an extent today still, some of the approaches to development take a technocratic route (see for example the *Africa Foreign Investor Survey 2005* (UNIDO, 2007: i, 3; Hara *et al*, 2009: 524). Here technology as opposed to the free market is seen as the panacea. Yet it quickly became clear that throwing money or technology at problems is not necessarily a solution.

In this sense Rosemary Ommer and her research project team undertook an interdisciplinary, cross-scale study of coastal communities of Canada – Newfoundland on the East Coast and British Columbia on the West Coast – to better understand the changes both socio-economic and environmental. Results of the study are presented in the exhaustive *Coasts Under Stress* (CUS) (Ommer, 2007) book. Preceding that project, research around the 1992 collapse of the

¹¹ See FAO documentation for an extensive and detailed description.

¹² Rittel and Webber are the first to expound on the term in print, as something that cannot be solved but only re-solved. Wicked problems, according to them, are a set of interrelated issues making it seemingly impossible to make any headway as addressing one aspect creates more problems.

groundfish stock on the East Coast as well as other fish stocks and natural resources (see Ommer, 2002; Coward *et al*, 2000) painted a picture of complex interrelated problems. Unchanging human action or inaction in the face of environmental change caused the collapse of fish stocks such as the groundfish, which left tens of thousands of people without employment (Ommer, 2007: 5). The argument is that up until recently academic and management approaches to fisheries (and the natural environment in general) has been bounded by disciplinary thinking. Implicit in this is the prevalence of natural scientific, quantitative data and methods in the management of natural resources and their harvesting (Scoones, 1999: 489). Simultaneously critiques of ecology from social science disciplines, such as anthropology, sociology and philosophy, have not recognised the complexity and variability with which ecology is conceptualised. Critiques of the natural sciences have often rested on a systems biology based on equilibrium theory (Scoones, 1999: 481,482).

CUS takes a “social-ecological health” (Ommer, 2007: 4) approach that has its roots in the new ecology literature of which Fikret Berkes (1999) is a notable exponent. Here too nature and society are not seen as independent entities but rather as co-producing systems that can be both resilient and sustainable. The notion of resilience is traced back to the idea of “constancy”, which Holling (1973) first introduced. What this enabled was an appreciation of ecological systems as resilient through long-term changes. This required qualitative observations of changes, which should be seen as expanding (not replacing) the usual quantitative explanations of the ‘natural’ world. Here the discursive link between ecology and social scientific approaches was established. Not only could humans be understood in qualitative terms but also the natural environment that many (fishers for example) engage with in daily life. The new ecology literature and CUS have taken this on and extended it to take problems such as fish stock collapse as social-ecological health problems in which the social and the ecological are treated as equally important, interlinked components.

Taking a social-ecological approach overlaps with the scholars’ interest in what can broadly be termed “local knowledge”. A growing body of literature has developed since the late 70s around bringing local knowledge and scientific knowledge into conversation with one another¹³.

Through this it has become clear that fishers in many places have an intimate understanding of local ecology. Along with others Barbara Neis (1999, 2000) has also provided great insight into the complexity of fisheries problems and how the business as usual approaches of top-down,

¹³ For example: Berkes (1977, 1987); Neis (1992, 1999); Palsson (1994, 1995); Harvey and Coon (1997); Hoeppe (2007); Knudsen (2009).

single or multi-species stock assessment and quantitatively-based scientific approaches were failing. Neis was also part of the research team in the CUS project. Her work takes the Cod stock collapse as an entry point showing that there is room and need for integrating the knowledge fishers have of the ecology they live and work with on a daily basis. Part of the problem as formulated by Neis and Felt (2000), lies in the perception of what constitutes legitimate knowledge in fisheries management. The need to integrate fishers' knowledge into existing management procedures is important as their lived and embodied knowledge can contribute to ensuring the availability of fish as well as fishers livelihoods. As mentioned, both Anderson (2011) and Rogerson (2011) make similar observations pointing to the importance of fishers' knowledge while making clear that the power relations need to be taken into account as only then conversations can take place in meaningful and constructive ways.

One of the ways local knowledge is envisioned to contribute to the management and scientific understanding of fisheries is through consultation with fishers. Ironically, one of the enduring themes of fisheries is that fishers are not heard in management contexts (Sowman *et al.*, 2011: 576-577; Neis and Felt, 2000: 15). There are various ways in which fishers are not being heard. In some cases this relates to fishers' knowledge not being taken seriously by scientists and managers in improving management. Another example is that fishers feel left out of policy formulation processes, despite the participatory concepts enshrined in legislative prescription. After all fishers do want to be part of the governing processes related to the marine environment, including fishing rights and formulating Total Allowable Catch (TAC). I focus on the latter in the following pages to develop an argument around the plurality of fishers in the context of possible experimental island closure. I show that the categories, however necessary, in which fishers are placed are not sufficient in attending to the plurality of ways in which resources are harvested. Precisely this kind of situation precipitates into situations such as the one in Gansbaai regarding Dyer Island. The breakdown in communication is indicative of fisheries-wide problems in southern Africa and indeed many other fisheries such as mentioned earlier.

The ethnographic material I present below reveals a set of miscommunications that are closely linked to the three groups I keep referring to: DAFF, scientists and fishers. These categories are of course not homogenous entities and thus my reference to DAFF and more precisely fisheries managers, is with an awareness of the changes that have taken place in terms of structure and the people that fill these structures. I also recognise that scientists come in many disciplinary and inter-disciplinary guises and that there is much debate and disagreement around how to manage fisheries. There are scientists that work in DAFF and there are scientists that are based at

universities but all are involved in the management of fisheries. Here another important distinction to highlight is that scientists advise managers who make the final decisions. While I am openly critical of fisheries management this is not to bash individuals. It is to show the experiences people have of categorical others, who usually take the form of institutions. There are many people making concerted efforts to improve fisheries. Nonetheless, Gansbaai fishers' experiences of fisheries management is in many cases one of dealing with an obscure and monolithic state, as I show later. My reference to fishers is mostly confined to those I worked with closely in Gansbaai, although discussions and the work of my colleagues has greatly informed a sensitivity to commonalities in fishers' lived reality. The reference to fishers is by no means a claim to universality, it is without a doubt a partial representation of fishers in Gansbaai. The material that I present here is the culmination of qualitative approach to research. As a Social Anthropological approach participant observation has been crucial, along with archival and interview data, in the process of creating this ethnographic account.

In trying to manage the fisheries in South Africa DAFF has invariably fallen into roles of enforcement and the concomitant curtailment of fishers' access to the ocean's resources. The globally and locally declining fish stocks such as the small pelagic fish have been reason enough for the state to intervene. Overfishing is overwhelmingly undeniable and fishers, however reluctantly, acknowledge this. The dire socio-economic circumstances fishers have found themselves in are often the source of much contention. It must also be understood that fishers and overfishing should not become unproblematically associated. The industrialisation of the fishing industry through the prerogative of the state was crucial in this sense. Science, with a capital 'S' and in the singular has featured large in these contestations as the undisputed truth in these controversies. In other words, conceptualising Science, as the objective knowledge extracted from nature is problematic in a number of ways (Latour, 1999). In the context of political ecology, it provides an already settled notion of nature that disables any politics (Latour, 2004: 3). In other words, real, democratic politics and vigorous debate which allow fishers, managers and scientists to create a common understanding of fisheries. Furthermore, Science obscures the work of the sciences as a disputed arena that is vastly changed and changing, as Scoones (1999) has shown. This also goes for fishers as I show in chapter one and the state in chapter two.

While the above discussion refers to fisheries in more general terms, the difficulties of managing and living from fish and marine resources are complex and cross-cutting. Furthermore, the plurality of harvesting strategies of fishers in Gansbaai makes hand-lining an important part of

fishers' lives. At the same time the small pelagic fishery is the focus of these fishers' efforts. While there is little sociological literature on Gansbaai and its fishery, two older texts and one more recent study have been very useful. Van der Merwe's (1979) thesis, the oldest of the texts, is an economic study of small pelagic canning in the town. He provides context for some of the earlier developments of the fish factory in relation to national and international changes in market demand for small pelagic considering the post-war years diminishing demand for shark liver. Elizabeth Barnard's (1986) 400 page Master's Thesis *'n Kultuurhistoriese Beeld van Gansbaai en Omgeving / A Cultural History of Gansbaai and Surrounds*, is an exhaustive account in the style of folk-ethnologists. She provides detailed record of seemingly everything in an effort to provide an holistic account of 'the culture' of Gansbaai¹⁴. Finally, the PLAAS (2003) study by Mafaniso Hara and Irma Maharaj places Gansbaai in the more recent context of shark-cage diving and tourism in general.

The miscommunication around the experimental closure of Dyer Island to purse seining has lead to a breakdown in communication around fish stock management. I take three points of entry to show the seemingly opposing interests of fishers and fisheries managers, which should be viewed as a productive tension on which to base what Sarah Whatmore (2009) refers to as a generative dialogue. In chapter one the ethnographic data on the many fishing practices of fishers in Gansbaai shows how the assumptions in the categories behind fisheries management assume congruence with the lived reality of fishers. The plurality of fishers is shaped by the founding of the co-operative in Gansbaai, which helped the town move out of its financial problems through entry into the booming industrial fishery of small pelagic. I argue that this industrial specialisation along with regulative categories has curtailed fishers in their activities. Furthermore, it has also determined the way small pelagic fisheries management has come to assume that small pelagic fishers only engage in this fishery. This helps to explain the wide-spread opposition, even by hand-liners, to the closure of the waters around Dyer Island to purse seining only.

Chapter two argues that fishers' opposition to the closure is based on the fear of a no-take MPA which would close the area off completely. I argue that this misunderstanding in terminology and intent is based on the complexity and long history of MPAs, which have become more nuanced and plural in their application and role in sustaining ecosystems. Central to the newer

¹⁴ Her grandfather, Johannes Rudolph Barnard was a key figure in the economic revival of the town and allowed her insight into some of the intricacies of the town's developments through his personal records. See chapter two's section on cooperative fisheries.

formulation of fisheries management of which MPAs are a part is EAF. South Africa's commitment to implementing an EAF approach is explored through the workings of DAFF's Small Pelagic Scientific Working Group (SWG-PEL), which informs management decisions for the fishery. It comprises both fisheries scientists and university scientists from mathematicians and biologists to ecologists and statisticians as well as officials who take the recommendations of the group to make management decisions. While industry representation and participation is present here my argument is that it takes a specific form.

Participation, I argue in chapter three, takes place on the terms of management and scientific categories. This returns me to the importance of understanding the lives of fishers, at least in Gansbaai, as not always fitting the categories given. The relationship between Masebhuke and Bernd is instructive as one that is built on mutual respect through the acknowledgement of each others' knowledge as helpful. Not to be naive, but it does provide a helpful starting point from which to take the tensions between fishers and fisheries managers as productive. Here I follow Sarah Whatmore (2009) in explaining the breakdown in communication as a generative event. With some of the existing work around fisheries and Gansbaai in mind I now turn to an ethnographic account of fishers' everyday life. The time I spent with fishers showed a diverse set of practices relating to the ocean, which are unpacked in detail in chapter one.

Chapter 1:

The Plurality of Fishers: Gansbaai's stake in the industrial fisheries

What is it to be a “fisher” in Gansbaai? The terms take on varying meanings depending on who is asked: In Gansbaai self ascribed fishers have very different conceptions of what it means or what constitutes a fisher. In contrast to this is the view taken within the state’s regulative framework of fisheries. The categorization of fishers into either pelagic, hand-line and long-line sectors does not allow for constructive conversations; rather they have become disruptive, helping to fissure various actors into misunderstanding each other.

Fishers in Gansbaai would regularly tell me how they, as fishers, felt unheard. This is also true of all those involved in fisheries, from managers to scientists. At first it seems to be a bit of a banality to comment on the industry-wide notion of “not being heard.” Yet there is more to fishers statements about not being heard than what is at first apparent. To explore this idea further the naming of fishery types such as purse seine, hand-line and angling are telling of a wider set of issues. In other words, I want to explore how the fishers become associated with a fishing type, method or speciality. More specifically, how is someone referred to as a purse seiner, hand-liner or recreational fisher? This naming convention can also be viewed as a categorization, which fishers exceed in a number of ways. The implications of this categorization are explored through the suggested experimental closure of Dyer Island. So when fisheries managers began communicating the experimental closure of Dyer Island to pelagic fishers these suggestions were met with stiff resistance from fishers. That is because hand-liners and pelagic fishers are often the same people. Often the crew that works a ski-boat catching snoek will a couple of days later, find themselves working together on a purse seiner. Not through some unusual coincidence but through the diverse skill sets and networks fishers deploy in life (in this case in order to fish).

Dyer Island, which lies just off the coast of Gansbaai, attracts a wide range of people and activities. The most popular no-doubt being the frenzied shuttling of tourists to the waters surrounding the island to glimpse the biggest, carnivorous fish in the world: the Great White Shark (*Carcharodon carcharias*). Well known for other reasons are abalone poachers, who often form part of larger organized crime groups. Abalone is harvested by scouring the shore-line on foot and/or in-shore waters by swimming/diving or on ski-boats. Frequenting the waters around Dyer Island are people using ski-boats and hand-lines eager to catch snoek, geelbek and a host

of other fast, large shoaling fish. Fishers also come to these waters in search of much smaller fish. These are small pelagic and almost exclusively comprised of sardine and anchovy. When hunting/harvesting these, fishers swap hand-lining techniques, technology and tools for hulled vessels and covering hundreds of square meters. Another set of people frequenting the waters around Dyer Island are those appointed by the state to regulate, in very broad terms, the activities of people on the water. A wide variety of tasks constitute this regulation which is carried out by people such as Masebhuke: from desk-bound to boat-bound work and everything in between.

Shark cage diving is a relatively recent and booming industry that has taken hold in Gansbaai and southern Africa since 1991, the year in which the Great White became a protected species (Hara and Maharaj, 2003: 32). The town's shark cage diving industry has grown immensely in terms of percent of the overall income in the town (Hara and Maharaj, 2003). Gansbaai was put on the proverbial "map" by shark cage diving. Yet this mapping or conception of Gansbaai is only one part of the misunderstandings around the experimental closure of Dyer Island. When the experimental closure was tabled to purse seine fishing in Gansbaai, it was met with staunch opposition that reflected the wider impasse of the fisheries. My contention is that an appreciation of the plurality and fluidity of fishing practices is central to the way fisheries are conceived and thus managed. To open up the current deadlock over the management of fisheries requires an understanding of what fishing means to people who fish. Such a representation requires a thorough understanding of contemporary life (at least the last few years) and through this an account of changes¹⁵ that have shaped the lives of those involved in fisheries. While a history of fishing in Gansbaai is important it is necessary to appreciate the history of Gansbaai in fishing too. In other words how have peoples' fishing practices changed from generalist to specialist. "Fishing" and "Gansbaai" are co-productive sites and although I have separated them conceptually for clarification, the ethnography begins to address how lived reality overflows the categorical containers we use in our attempts to come to terms, piece by piece, with the world. This is in the spirit of acknowledging, in the words of Werner Heisenberg, that "there is a fundamental error in separating the parts from the whole, the mistake of atomizing what should not be atomized" (quoted in Anshen 1987: 224). The ethnography presented below aims to complicate things again as a way of representing the world of the fishers with whom I worked.

¹⁵ Some of these changes are spatial and temporal others more specifically relate to Gansbaai as a town, the practice of fishing as well as the scientific and policy process that goes into shaping managing fish stocks.

Narratives such as Oom Piet's below show how categorical assumptions imbued in terms such as "small pelagic", "hand-liner" and "angler" fall into the trap of substituting life with these ideas unproblematic. While our categories might successfully address one aspect or time of life they, much like governance structures need to be revisited and adapted. The New Zealand anthropologist Michael Jackson's case for a radical empiricism addresses just this kind of a view; one that approaches the experiences of life as empirical. There is no need to move to abstract thought to comprehend the world. The world out there is not comprehended by way of an internally originating idea (subjective) which stands for the object out there. This nondualistic view emphasizes the "interdependency of mind and body, Self and World [which] reveals unities; it is not a figurative way of denying dualities" (Jackson, 1989: 142). Jackson summarises this idea most succinctly as the "intellectualist fallacy of speaking of life as if it were at the service of ideas" (Jackson 1989: 2). Ethnography provides a way of exploring the categorical assumptions of terms such as "small pelagic", "hand-liner" "angler" and other fishing types, in a way that allows theorisation of the problems to be grounded in their own context. It is with this in mind that Oom Piet's retelling of his childhood in Gansbaai begins a longer story about the place of these terms both contemporaneously and in the development of the wider fishing industry around the Cape.

Oom Piet recounted how he used to live there, pointing from where we were sitting to just below the *koppie*. It seemed an unlikely place to live as it was a camping ground and caravan park squashed between the steep hill-side of the *koppie* and the rocky shore next to the harbour. There used to be stone houses there, Oom Piet continued, which were part of the first few built here and that is where he grew up. He used to go fishing after school along the shore in front of the house. Sometimes, depending on the time of year, he would have to walk further along the coast and would spend hours catching fish, crayfish, abalone and mussels. Most of the time he worked with his rod, pulling many fish out of the water. Most of the harvesting Oom Piet did land on the table as food. A lot of the fish caught was preserved by his mother who would smoke and salt the fish for consumption at a later stage. There was no electricity and as Oom Piet repeated with disdain for the grocery shops that litter the town now: *daar was nie shops nie. Jy kon daardie die tyd nie net shop to loop en melk haal en vleis koop en alle soort sulke goed. Jy het geëet wat jy van die land gekry het of wat die skuit terug gebring het*/there were no shops. At that time you couldn't just walk to the shop and fetch milk and buy meat and those kinds of things. You ate what you got from the land or what the boats brought in.

In hindsight I should have asked Oom Piet to elaborate on the relationship with farmers that

fishers like him had. The presence of Afrikaaner capital acquired through agriculture plays a larger part in the development of the fisheries in South Africa and is detailed later in this chapter. Angling off the pier and along the shore required small capital outlay, if any. The narrative of plenty that Oom Piet related to me on many occasions echoed the words of some of the current generation of senior fishers. Kobus for example also spoke of the times when fishing was plenty and as I will show below, that purse seining and necessarily fishing practices in general took place on an annual cycle. Yet these contexts of plenty do not necessarily correlate with those of commercial fishing of small pelagic. Larger capital ventures require a different context of plenty than do the fishing activities of someone like Oom Piet subsisting, in part, by harvesting the ocean.

The ethnographic examples below are a way of showing the lived reality of fishing as it took place for some of the men I worked with. It is a way of unsettling the current understanding of fishing as not monolithic over time and that fishers in Gansbaai, at least, have changed their approach to living off the sea concomitant to the technological, market and state forces all the while trying to maintain a sense of solidarity through the Gansbaai co-op.

Four ethnographic moments on diverse fishing practices in Gansbaai

The ethnographic material presented here shows that fishers in Gansbaai caught and to an extent still catch a wide variety of fish and shell-fish. Yet fishers' access to or their own effort placed on each fishing type diminished. The last decade represents another phase of specialisation or focus on less species. What follows is by no means an exhaustive presentation but a focus on three fishing types: hand-line, trek netting and purse seining. In the case of hand-lining, many lost their fishing rights in the last round of rights allocation while trek-netting is now banned. One kind of fishing that is still practiced, although far less intensively compared to a few generations ago, is angling.

For the first few generations of settlers in Gansbaai angling was a source of food. Fishers that angle now fall under recreational angling regulatory frameworks. In doing so Jannie and Kobus become grouped with sport fishers or those that do it 'just for fun'. Yet angling for fishers in Gansbaai carries with it a set of meanings and functions that fall beyond those of the state's "recreational" anglers. Kobus says:

Dit hou ons besig ternyl ons op die vis wag. Anders sit jy maar net rond soos die skuite.[...]My skuit

staan maar net in die jaart en doen niks nie. / It keeps us busy while we wait for the fish [anchovy and sardine]. Otherwise you sit around like the [ski] boats. My [ski] boat just stands in the yard and does nothing.

When Kobus says that angling keeps him busy he refers to the constant contact with the ocean that fishers often related to me. That is also why perhaps he made the analogy with the disused ski-boat, which should be used for hand-lining and not rust away in the yard.

One morning I met Jannie on the Plaat. He looked pale and was coughing from what sounded like quite a serious lung infection. But he was adamantly sitting there angling. He had returned a couple of hours earlier, at 5:30am, from a purse seining trip in which the boats had gone to Hout Bay, further than usual.

Sven: *Daardie hoës van jou klink nie baie goed nie. Will jy nie liever in die bet wees?* / That cough of yours does not sound too good. Don't you rather want to be in bed?

Jannie: *Nee, dit sal my net nog meer siek maak. Ek moet hier buite wees, die see lug maak my bors beter* / No, that will only make me even more sick. I must be outside, the sea air will make my chest better.

Kobus joined us at that point and they started discussing which angling spot to use. Not only was Jannie sick but both him and Kobus only had a couple of hours sleep, if any. Yet they were out angling. Jannie made it clear that he needed to be angling or fishing in some way to overcome his sickness. This shows that angling forms an intricate part of life for fishers.

Angling is widely practiced among fishers here and always eagerly discussed at gatherings. Of the twenty or so fishers I regularly engaged with on the *koppie* all except three or four angled extensively. I often joined some of the fishers when they went angling along the shore of a recently proclaimed nature reserve. Those that angled had a wide variety of fish they considered catching. However, one fish, galjoen, is always a prize catch. Jannie and Kobus were hardly deterred by the incessant drizzle that seemed to soak everything but their enthusiasm for galjoen.

The familiarity with this stretch of coast reaches far. It is reflected in the considered movement and decision making while locating the fish. All their moves are carefully considered. From the choice of outcropping to the casting of the line and the way the bait is pierced and wrapped onto the hook. Every time I enquired, there was a specific reason for the choice made that is

linked to the present environmental conditions and past experience.

Sven: *Hoekom gooi jy daar en nie daar nie?* / Why do you throw [cast the line] there instead of there? [Pointing to a previous casting spot and the new one]

Jannie: *Daar is nou 'n poel. Sien jy? As die water so is, so rof dan moet ek hier gooi sodat die vis dit kan sien.* / There's a patch of clearer water [pointing to the new spot]. Do you see? When the water is like this, rough, then I have to throw so that the fish can see [the bait].

Jannie had been talking about this outcropping a while earlier as suited to the murky conditions of the water. When talking about angling there are always very specific reasons why one location is chosen over another. Sometimes the precise spot where the line is cast is explained down to two square meters. Detailed explanations of where fish is located forms part of many conversations. Stories and conversations between fishers in Gansbaai were often tied to fishing in some way.



Figure 5: Angling off the rocks of Walker Bay. The northern outskirts of Gansbaai's holiday homes perched on the cliffs in the background.

Johannes, one of the purse seine skippers told me how one of his first trips as the skipper of a

ski-boat (hand-line fishing) almost cost him and his crew their life when the wind caught them unawares.

Daar was so veel vis in die boot, en toe kom die wind en het ons net so ge-capsized. Toe hulle later die middag die boot find was dit so 30 myle verder opgespoel, so sterk was die wind. /

There was so much fish in the boat and then the wind just came and capsized us.

When they found the boat later that afternoon it had washed up about 30 miles away; that's how strong the wind was.

Johannes' account of his capsized ski-boat focused on the near death experience and what led to that event. He accounts for the events of that day through his inexperience as a young skipper, rough swell, a sudden change in cloud cover and wind. Yet he manages to make very clear where they were fishing and what they had been catching: Quoin Point and snoek – lots of it. It becomes apparent that these men constantly need to be angling or at sea to feel *reg* / right or proper. Not being able to fish (in whatever form) fosters a feeling of “claustrophobia” as Jannie put it. Similarly, conversations make constant reference to fishing. So far I have shown that fishing not only forms part of the daily physical activities of fishers but also features extensively in stories and gossip or *kak praat* / to talk shit, as a few call it.

The ‘days of plenty’, when fish were abundant are often recounted. *Trek netting* or beach seining was often talked about in the context of plenty. Kobus was particularly fond of telling me how great it was to work hard and be rewarded with a full catch.

“Die beste is as jy die net weer terug trek en die vis loop op die sand. Dan weet jy jy het vis in die net!” / The best is when you begin to pull the net back again [out of the water] and the fish run up onto the sand. Then you know you have fish in the net!

With fifteen hundred fish on the back of the *bakkie* (pickup truck), it struggles to get out of the water and back onto the sand. The fish then have to be brought back to the harbour to be sold. Danie recalled what it was like for him then:

“Ons het nie baie geld vir vis gekry nie maar dit was genoeg en daar was werk, jy was besig. Dit het ons nie ryk gemaak maar jy was gelukkig met wat jy gekry het. We did not get a lot of money for the fish but it was enough and there was work, you were busy. It did not make us rich but you were happy with what you got”.

From conversations on the *koppie* it was apparent that many of the men had practiced beach seining and that it was a firm part of their repertoire of fishing methods. Similarly, purse seining has been a firm part of life for fishers; now more than ever. Oom Piet who regularly visited the *koppie* to chat with the fishers and hear what was going on recounted some of the most telling stories of purse seining while he was still active at sea.

There was so much fish that you couldn't catch it all. You would fill the trawler and everybody [all the other boats] you went to sea with also filled their boats and it looked like you had hardly put a dent into it [the shoal].

While Oom Piet did not frame these kinds of accounts as regular or normal occurrences his point was, as he said *dit gebeur nie meer nie/* that doesn't happen anymore. While bumper catches such as that one do not happen the way they did, purse seining is still very much part of fishers lives. As can be seen when Kobus, Jannie, Johannes and Oom Piet¹⁶ along with other skippers and crew are on the pier preparing the purse seine vessels for a fishing trip.

The hour before the six purse seiners depart from the harbour is interesting in this way as it confirms what the often unclear outcome of sometimes heated discussions on the *koppie* are. Usually in the late afternoon around four o'clock the crew and skippers of the vessels would begin to gather on the pier next to the round-bellied boats. While the boats gently rock and creak as they continually run up against each other, the men begin to prepare the vessels and chat. The boats moored furthest away from the dock receive attention first, as the engineers prime the engines and the crew begin to loosen the massive ropes holding the boats in place. During this time men from other boats have time to chat and often mock those prepping the boats, knowing full well that their jest is short lived. Many catch up on what has happened since the last trip. Jokes are flung across the pier as some men pick up where they last left off conversations. Eventually, one boat after the other idles out of the harbour and with them the clamour and hive of activity subsides as the voices cannot bridge the distance between boats. Now the radios come into play and the skippers begin an excited, playful round of conversations that are seemingly impossibly quick to keep abreast with.

¹⁶ Although Oom Piet is retired he still sometimes joins the men at the pier, like on the *koppie*, to chat and listen.



Figure 6: Purse seining involves fanning out to increase the chances of finding fish. This view of a fellow purse seiner was taken roughly an hour outside Gansbaai due West.

Oom Piet's recollection of purse seining while he was still active was from around the 1970s and 80s and in combination with the scene from my fieldwork in 2010 shows that purse seining has been part of fishers' lives over the last few generations at least. Fishing of all kinds has indeed been around for many generations¹⁷. While an extensive account of fishing types and the development of the fishery is important, my aim here is to relate how fishing carries great weight for the men I worked with. More importantly, the spatial and temporal multitude of ways in which fishers catch fish is what makes this so apparent. The daily life of Kobus, Jannie, Johannes and Oom Piet, of which I was privileged to be part of, allows these narratives of plurality to speak to the daily act of fishing that I observed. Not only is fishing done at any time of day or night, such as the over-night trip, but also *continually* as Jannie and Kobus did by angling after that overnight trip. It also takes time to access the spatially diverse locations that they frequent to catch hand-line fish such as geelbek and snoek; sardine and anchovy when purse seining and galjoen when angling. Fishing takes place in many places and at almost any time.

It is not only the consistent occupation of fishing that makes apparent how it is part of or is itself life. While some activities earn fishers a cash income, others such as angling are a source of

¹⁷ The history of fishing types and industry in Gansbaai and the Cape more generally comes into this chapter later on.

food. Unlike Oom Piet, who at one point caught fish as part of a wider repertoire of subsisting, as was mentioned earlier, catching fish as food has a different meaning in contemporary Gansbaai. It does save the household some money as some of the men are effective anglers and always had better catches than some of the non-resident or occasional anglers they pointed out to me. When passing by or in brief conversations with them, fishers would often quip and joke with me about how clueless the non-fishers were at catching fish. The “recreational fisher”, as defined in regulative policy, covers a range of activities that easily encompasses Kobus, Jannie and Johannes, as well as those that do not have the same intensity of contact with fishing that shapes fishers lives the way it does.

To bring home a nice fish sets off a series of activities that the women as wives and/or mothers of a household are mostly in charge of. Besides preparing a whole host of dishes the fish can be cured, pickled, smoked or made into *biltong*¹⁸. Kobus in particular had the most astounding lunchbox, which he proudly told me Sandy (his wife) packs for him whether he is fishing at sea or from the coast. The best part, and one I got to try, is the galjoen dumpling. Tina (Bernd’s wife) on the other hand introduced me to snoek biltong, which is delicious.

Another way the pervasiveness of fishing became apparent was through storytelling. Stories made reference to fishing at what seemed almost any opportunity. This is succinctly captured by a lengthy story Oom Dirkie was telling Oom Piet about Joost (a fisherman from Gansbaai) and his wife.

While I do not have the space to recount the entire story here, the central theme, for Oom Dirkie, was to show the undeniable differences between men and women. Yet there was another narrative to the story in the form of a recurring reference to fishing. Despite the central theme, idea or argument of the story having nothing to do with fishing, Oom Dirkie inserted, almost as an aside, that the man in the story had gone fishing, adding: “*maar ek weet nie watter vis nie*” / but I don’t know what kind of fish. Not only did Oom Dirkie bring fishing into the story but he also made clear that he did not know what fish Joost had caught. There are three points to emphasise here: One, the general mention of fishing in a story that deals with the differences between men and women. Then the clarification that Oom Dirkie does not know what fish was caught; and finally that Joost got into trouble with his wife for going fishing on that weekend she came to visit him. Many stories mentioned where and what fish was caught. If the story teller did not

¹⁸ To make biltong, usually from red meat, is a lengthy process of drying and salting the meat, which takes some skill and experience to get right – not too dry and tough but also not too soft and ‘raw’.

know these things he would say so. However fleeting, there is always an effort to give details about fish.

Fishers in Gansbaai draw on a diverse set of fishing skills that are not bound to one type of fishery. The men I spoke to do not view their work as a job. To say: “*ek is ‘n visserman*”/ I am a fisherman”, refers to the life-long practice of attending to the ocean and catching fish. For Jannie one of the exemplary ways in which he relates his closeness to the sea is through his 16th birthday, which he remembers celebrating while at sea on a purse seining trip. Many times over the men would mention to each other how they feel the need to be at sea; that being on land makes them feel confined.

Fishers do not practice one or two types of fishing but often three and in the recent past even more. Their daily activities take them through a host of settings. These involve vast changes in technology, biophysical environment and policy realms. For a policy to be formulated such that it only takes account of one, small aspect of fishers means that the complexity of being a fisher is easily lost and with it an appreciation of problems faced by those whose lives are intimately bound up with catching sardines, anchovies, snoek, geelbek, galjoen, to name but a few. Fishers not only fill multiple discreet categories they also exceed them. While I have presented this excess or overflow through the plurality of fishers’ lives, it is important to locate this plurality in the longer history of Gansbaai. The historical development of fishing in Gansbaai helps locate the response to the experimental closure of Dyer Island in relation to the multiple fishing types being practiced there. The factory and larger-scale, commercial approach to fishing must be understood within the development of commercial fisheries on a national level. As alluded to earlier through Oom Piet’s narrative of catching fish for food, fishers’ practices have changed in parallel to the developments of the town – at least until recently. Changes in fish stocks and the rise of tourism in Gansbaai have challenged the dominance of fishing in the make-up of the town.

Pre- and Post-Cooperative Fisheries in Gansbaai

Indeed fishing in South Africa and more specifically the West and Southern Coast has undergone vast changes. Some of the earliest fishing that took place, around the cape, was on a small scale as a form of subsistence. This takes us back thousands of years where nomadic hunting, gathering and mobile pastoral practices of Khoen and San along the coast involved fishing. The earliest records of human activity in the Gansbaai area belong to some of the oldest in the world

and form part of South Africa's wider archaeological hominid record. The De Kelders caves (often referred to as *Die Kelders*), situated a five minute drive from Gansbaai harbour, shows evidence of human activity dating from between 70 000 to 100 000 years ago (Parkington, 2006: 96). Over this period and into the more recent past, according to the archaeological record, both hunter gatherers (often grouped under the term San) and pastoralists (Khoen) were occupying the caves around the southern Cape. John Parkington links this to a "transhumant existence" (2006: 21) where people moved to and from the shore. Rick Rohde and co-workers make a similar observation for the Namaqualand area of the Northern Cape and show an interesting link to later farming practices too (Rohde *et al*, 2003; Parkington, 2006: 69). In other words, both in the contemporary world and that of the early inhabitants of the area, livestock and fish stocks feature.

For mobile San and Khoen moving between land and coast, fish formed part of a wide dietary menu that mainly consisted of crustaceans and molluscs such as black mussel, crayfish and abalone. For these very first inhabitants of the area, an intricate understanding of what is now referred to as "the ecosystem/s" was necessary in much the same way that fishers in Gansbaai draw on and enact a certain understanding of the environment. The extensive caves, shelters and shell middens found along the Gansbaai coast point to the spatially overlapping lives of present-day fishers with those of pioneering nomadic hunters and gatherers, as well as pastoralists.

The fishers involved here, however, have a more direct genealogical connection to some of the early European settlers that moved along the coast from what is now Cape Town. As a harbour, Cape Town served as a rest and refilling station for vessels due East for India (Barnard, 1986: 17). This meant the primary concern was to supply ships with valuable perishable goods such as fresh vegetables, fruit, meat and water. Yet the growing population at the station needed more and more food and an increasing number of people began to move inland and along the coast (Rohde *et al*, 2003). Along with these movements are some of the first ship landings along this stretch of the coast, which lead to people exploring the area from Stanford to Danger Point and further. In this sense defining the founding of Gansbaai is a somewhat misleading endeavour. Farming and exploration took place in and around what is now Gansbaai (Barnard, 1986: 24-26). Yet there are records of some of the first Afrikaans speaking settlers who permanently established specifically at the fresh water fountain near the edge of the ocean (*ibid.*). The land including Gansbaai but also the surrounding area from Stanford to Danger Point came to be owned by the farmer Jaap de Villiers (*ibid.*). His livestock post came to be the dominant feature of the area along with the three houses built at the waters' edge. These were built during the

1880s by some of the first fishers to permanently settle in the area since the arrival of colonists further West in Cape Town (and since Khoen and San cyclical return to the area). Yet when de Villiers took ownership of the land he forbid the selling of fish and began charging the fishers rent. These in turn successfully petitioned the authorities to buy the land from the farmer allowing them to sell their fish freely.

While fishers had secured some form of land tenure through the state it was not until 1920 and the arrival of Johannes Rudolph Barnard that larger changes were made. J. R. Barnard was the school principal and became heavily involved in the administration of Gansbaai (Barnard, 1986: 29)¹⁹. Having officially declared, in his words, the subpar harbour through the state he was appointed as representative of the Department of Railways and Harbours in Gansbaai. He had to collect money for maintenance of the harbour as well as “pasture fees” (*ibid.*). The latter appointment meant he was also representative of the Department of Lands along with his appointment with the Department of Justice.

Barnard helped to grow Gansbaai to a town with hotel, movie theatre, post office and a “flourishing fishing community” (Barnard, 1986: 31). When he left Gansbaai in 1945 Barnard was employed as the Managing Director of the Fisheries Development Corporation (FDC or sometimes referred to as Viskor). This state organ was put in place to control and expand the country’s fisheries. The waters around Gansbaai were declared controlled and under the pro-industry management of the fisheries, the needs of Gansbaai fishers were also protected.

Another influential figure in Gansbaai in the first half of the 19th Century was Paul Lafras Zietsman, who took over as school principle from Barnard. In 1950 Zietsman saw that the fishing industry in Gansbaai had taken a turn for the worst. The shark liver factory which produced vitamins and oil slowly ground to a halt, first through the end of the World War II in 1945 but followed by international competition and the development of synthetic oils (Barnard, 1986: 365). As a way out of this Zietsman drove the founding of the fishing Cooperative *Gansbaai Koöperative Visserye Beperk*, travelled to Cape Town with a committee representing the Cooperative, Zietsman presented their case to the FDC of which Barnard was director. The Cooperative was awarded a £3000 loan and operated as a branch of the FDC for two years (Barnard, 1986: 33). The disused shark liver factory served as an ideal starting point for the new fish meal.

¹⁹ A point of clarification between the person J. R. Barnard and the author Elizabeth Barnard is necessary here. The latter’s 1986 work is referenced here and mentions J. R. Barnard.

Having successfully turned around the fishing industry the branch became a fully independent Cooperative and used its much stronger financial position and connections to the directorate of fisheries to educate fishers and place them in various state fisheries committees. The fishers and boat owners also bought shares in Gansbaai Marine (Pty)Ltd to the value of R300 000 (Burger, 1966: 33). The Cooperative operated under the agreement that purse seine vessels (owned by fishers) would supply the factory (owned by Gansbaai Marine) with fish. The Gansbaai Cooperative is unique as the factory and boats are owned separately. Whereas it had started this way in many other West Coast fishing towns as well, the factory and boats are now often owned by a company in which skipper and crew are employed along with land-based factory workers and staff.

By the late 1960s Gansbaai's fishing industry grew into a multimillion rand operation (*ibid.*). The large economic scale of fishing here is mainly attributed to the fishmeal factory; fed by small pelagic, purse seining activities. Van der Merwe (1979: 47) notes that the fishing quota was being filled long before the quota year was over (which was the 31st August). Importantly, the sardine catches increased enormously for Gansbaai from 1963 when these disappeared from the West Coast (specifically St Helena Bay) and the fishery moved to between Cape Point and Aghullas (Van der Merwe, 1979: 23). His work was to establish whether a sardine canning factory would be viable and shows that there was a large increase in sardine catches over the period 1968-78 (pg. 51) and that these largely took place within 45 minutes of the harbour (pg. 48). The Cooperative took full advantage of Barnard's directorship to align themselves with state expansion of commercial fisheries such as purse seining. While fishers managed to switch from shark liver processing to fish meal production, those fisheries not aligned with the large-scale commercial development impetus of the state struggled. Mesh net sizes for beach seining became regulated around 1948, which made fishing more difficult (Scott, 1951: 140). Along with hand-lining these were almost the only sources of income and food. This growing dependence on or specialization in industrial fisheries characterizes the fisheries of the 20th Century in South Africa. Indeed the 'improvement of half-schooled' fishers, as mentioned earlier, through placement on committees and in various forums, encouraged this specialization even further by impressing the institutional functioning of commercial-industrial fishing on these. These changes represent a local expression of globalizing forces, which Bush (2009: 5) summarises as:

the loss of organic associations in fisheries and the emergence of cybernetic networks made up of tools and technologies which have sought to make fish and fishers more legible and, therefore, controllable. In doing so the authors in this special issue take on the ambitious task of confronting the

very pillars on which fisheries management were built in the twentyfirst century – modernisation, science and the state.

This relates to a more intricate story in Gansbaai where fishers moved into the industrial sector for financially strategic reasons that had vast impacts on their relation to the state. To explore this further I begin by looking at the earlier industrial or commercial fisheries developments.

Regulative Frameworks of Commercial Fisheries in South Africa

As an anomaly the Gansbaai Cooperative was rationalized through the need to curtail market forces by supporting those lagging behind the rapidly expanding fisheries under the state's free-market orientation (Burger, 1966: 34; van Sittert, 2005: 296). As mentioned, the Cooperative fell under the state's FDC which was part of a wider program in which the state took control of almost all fishing grounds, while simultaneously promoting commercial expansion. This is part of the state's wider program in which access to fish (and other marine resources) became controlled. Prior to these controls and rising commercialization, fishers accessed the ocean as independent, small boat owners such as Oom Piet and those early fishers in Gansbaai who asked the state to buy the land from De Villiers, so that they could live without rental costs and sell their fish to whomever.

Industrial scale fishing began after World War II, and expanded at a very rapid rate. As Peter Scott notes, unregulated, independent, small-scale fishers operating from numerous locations around the coast dominated the period before the two World Wars (1951: 123; van Sittert, 2003: 208-211). Fisheries were of little interest to the mining- and agriculture-biased state seated in the then Transvaal. Yet, it is clear that the government began growing the fishing industry during the 1940s (van der Merwe, 1979: 23). This is in part to fill the gap, both in terms of export and protein value, left by an underproductive agricultural sector (Scott, 1951: 123).

The industrialization and expansion of fisheries in South Africa was promoted in overt ways through the building of numerous factories for processing and exporting fishmeal, oil, vitamins and canned fish (Scott, 1951). The promotion of industrial fisheries took place in more subtle ways too. Early settlers in Gansbaai, according to Jan Fourie, harvested Guano and eggs on Dyer Island until it was stopped by authorities early in the 20th Century. Net mesh size restrictions are one way the state placed restrictions on beach seiners, while purse seiners continued unhindered

(Scott, 1951: 140). Gradually promulgated regulations provided legal and institutional support to fisheries such as purse seining, which were deemed economically efficient and superior to those of small beach seiners and hand-liners. The latter were not capable of achieving the same catch per unit effort that, for example, the purse seiners could. Hand-line and beach seine fishers were not able to compete and “believed their livelihood to be threatened” (Scott, 1951: 137), which led to the initial banning of purse seine nets shortly after introduction in 1890. The specialization required to profitably sustain industrial fisheries is substantial. Specialized boats and nets not to mention the other technological investment such as the factories, require huge capital to start.

Laury, the man managing the boat quotas in Gansbaai, walked through the massive storage warehouses with me. One of the sections contained canned sardines about four meters high and covered 90m². On our way back from the warehouse Laury commented: “it’s big money, there is a lot of money that moves around here and it is an expensive operation. But you only make small amounts [of profit] from each tin. That’s why you need so many fish.” Having followed the fish from boat holds to pallets through the factory, Laury’s comment made immediate the difference between hand-lining, angling and beach seining on the one hand and purse seining on the other. While I speak of fishers and fishing it is important to remember the vast technological and skilled differences there are between each type of fishery.

In Gansbaai this plurality has carried through to today. The Cooperative is instrumental in this as it resulted in a specific expression of industrial fishing not found elsewhere. To turn around their financial struggle, fishers in Gansbaai drew on their connection to Barnard in the FDC and entered the national and international fish market. The ‘decision’ or change to enter a highly technologised, capital intensive and specialized small pelagic fishery was no natural progression from previous activities. Rather, it was an opportunity to improve the financial situation in light of difficult small scale fishing conditions and the threat of being assimilated into the wider industrial fisheries as happened along the West Coast.

Here the first fishing-type (such as hand-line, pelagic) classifications came into play in a regulative role. People were no-longer a fisher but a pelagic or hand-line fisher. Through regulation – the need to order a vast variety of activities – identities that were and are fluid gradually became circumscribed in the language of state bureaucracy. The regulation of the ever more complicated world of fisheries was seen as a necessity for the state in order to provide jobs and economic growth (van Sittert, 2006: 196). The plethora of hardware employed to target specific species in the most efficient way possible has lead to the categories of fishing type that broadly correspond

to groups of fish species. The categories hand-line, pelagic and long-line fishers became part of our daily vocabulary and conceptual tools. Yet to bound people by the activity of pelagic fishing leaves out much of what makes this person a fisher. As Jannie said to me: *“Ek’s a visserman gebore, my sestiende verjaarsdag was ek op die skuit.”* / I was born a fisherman, on my sixteenth birthday I was on the boat.

Here, the case of Dyer Island becomes important as it brings to a head the problems faced in regulating or managing fisheries. In the daily exercise of regulation the categories, small pelagic-, hand-line- and long-line- fishers are being equated with people. In the process people are seen to correspond to the borders drawn by these categories and not transgress them (polluting the categories) – they are after all, according to regulation, either pelagic or hand-line or whatever else but rarely more than one of these. The potential experimental closure of Dyer Island was met with clear opposition when the case was made in Gansbaai. A broad spectrum of people were present from tourism, nature conservation, fishing and of course the DAFF officials who called the meeting.

All fishers present, whether hand-liners or purse seiners, were in opposition to the closure. There are two points of contention here for DAFF officials. One is that *all* fishers, not only the ‘purse seiners’ opposed the closure. It is my contention here that this broad opposition is perfectly understandable in light of the plurality of fishers’ lives. While some might officially be part of hand-line or small pelagic associations, they often have interests in the other too. One very well regarded purse seiner is part of the core of the Overberg Hand-liners Association. Fishers’ plurality, ironically, translates into a singular interest: fishing.

This point introduces DAFF’s reasoning behind the experimental closure and how the breakdown in communication between management and fishers seems so intractable. Management’s understanding of Gansbaai is predicated on purse seining as the proposed closure comes from the working group concerned with small pelagic. Between the functioning of discreet working groups and the fearful assumption by fishers that conflates any mention of “island closures” with MPAs, has lead to this seemingly intractable breakdown in communication.

Chapter 2:

“Island Closure”: a misunderstanding in terminology and intent

Sitting at the dining room table with the TV running on mute, Bernd was talking about the film crews that frequent Gansbaai to document the sharks. Rows of teeth-gnashing Great White shark photos hang on a nearby wall. In between these are ones adorned with a squiggly coki-pen signature in the corner of the frame that pictured film makers and researchers he had worked with over the years. Anna, his wife, brought him some sandwiches for breakfast, which he indulgently dispatched followed by a smiling complaint that asked for more. Bernd had been telling me a lot about hand-lining and the problems faced by hand-liners since many had lost their licenses in the new round of applications – including one of his sons. People try to come by without the license but, Bernd explained, it is difficult to find other work when you have been fishing all of your life.

The narrative of loss is repeated in many themes and conversations with fishers. During the course of the morning, Bernd also tells me about the angling they used to do and that the nature reserves that are springing up everywhere make it seemingly impossible to go angling. At least angling now is very different to the way it was once practiced. “We used to just drive there [what is now Walker Bay Nature Reserve [a provincial nature conservation parastatal] and angle and come and go as we pleased. Now you need a Wild Card [annually paid subscription for entry into the reserve] to go in and there’s a boom that you have to go through.” Bernd continued, “these nature reserves are surrounding us and closing everything off. I remember as a child we used to go on holiday here up the coast [pointing East of Gansbaai] and we would stay on the beach for a week and just live off the sea. Now at sunset you have to be out of the gate.” He was angry that nature reserves were being sold as something that gives everyone access to nature when “now it’s too expensive, nobody can go in there. Do you see any locals in Kruger [National Park]?”

Playing Devil’s advocate I asked: “But don’t you think that the reserves also help to protect nature and the fish? I mean you say that there are some fish that are a lot scarcer now than when you first fished.” Bernd’s reply was pragmatic: “Ja, I know what they say, that the fish can breed there and part of that is true. They say that the fish numbers go up in one place and then the

fish can move on to re-build populations in other places. But there is no proof, and” he added at the end “they can’t control it. Poachers still go there. It just means that honest people like you and me can’t do what we’ve done our whole lives. I can’t take my family to the beach [making reference to the weeks-long holidays when he was young]”. The issue of enforcement is a thorny one as it revolves around the control of that which is defined as “illegal activity”. The exact extent of poaching and illegal fishing and its impact on the marine ecosystem is inherently difficult to ascertain. It is however clear that poaching is an ongoing and growing activity especially within protected areas (Attwood *et al*, 1997: 341; Steinberg, 2005; Hauk and Kroese, 2006: 76-77; Raemakers, 2011) such as Dyer Island and in particular the wider Gansbaai vicinity. As pointed out earlier, the state’s regulation of fisheries on a commercial-industrial scale began in the 1940s and is still carried out today in part to control over-exploitation of marine resources, focussing on target species. Ecosystem orientated regulative measures, such as the proclamation of MPAs, have arisen as a systematic management approach²⁰ more recently in light of fisheries management and science trying to ensure long-term availability of targeted and non-targeted species, as well as ecosystem functioning (van Sittert, 1995: 532; Sowman *et al*, 2011: 574). One expression of this comes through establishing MPAs. The areas are marked off and extend from the coast out to sea; their borders only conceptually outlined in documents and maps as opposed to the physical fences used in terrestrial protected areas. MPAs aim to fulfil a role similar to that of a terrestrial nature reserve but with the added difficulty of not being able to control the flow of animals into and out of the area in the same way fences do. In addition to this, MPA management and scientific study of these areas, as in the rest of the ocean, has the difficulty of not readily being able to see or observe the flora and fauna contained therein, making data gathering and assessment even more difficult than in terrestrial reserves.

Bernd mentioned a new proposal to create a nature reserve which he called an MPA. Upon asking why he calls it an MPA when it had been presented as an experimental closure, his reply was simple: “they [protected areas] all start like that and then before you know it it’s a reserve and you can’t change it unless the president or the minister signs it.”

²⁰ I return to this in more detail from page 40.

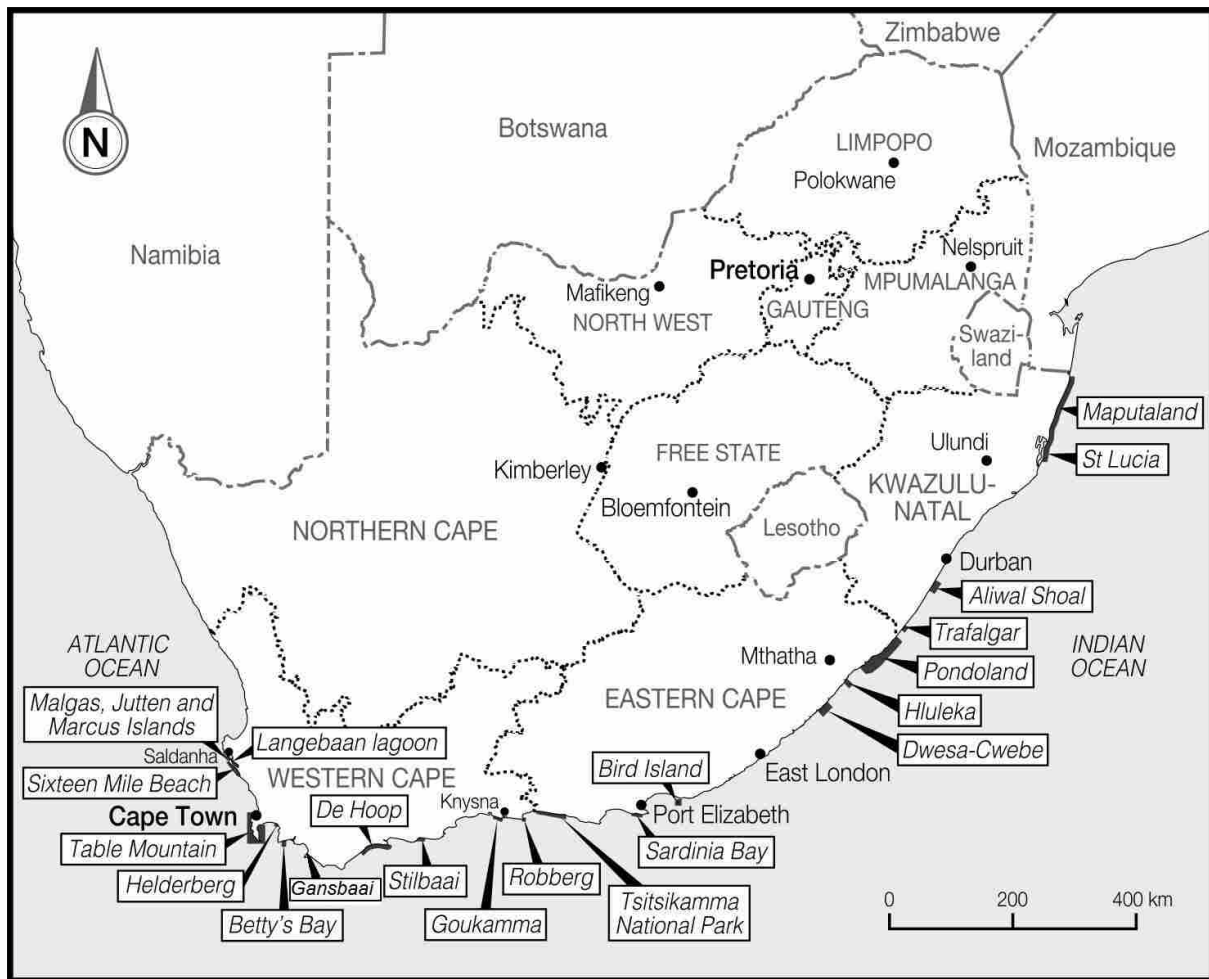


Figure 7: South Africa's 21 MPAs as of January 2012. Gansbaai indicated by red dot East of Betty's Bay MPA. Courtesy of DAFF, Recreational Fisheries Brochure.

MPAs as part of wider management

One thing that is clear from conversations with Bernd, Kobus Jannie, Oom Piet, and other fishers too, is that there is often little clarity around conservation and management actions. Be it prohibition of driving on dunes; access to areas restricted to certain times of day; or large-scale exclusion zones such as MPAs. The map in Figure 7 is an example of this. It is one of the two examples of the most recent map of MPAs that I could find. The other map is one that is available as a hard copy in the recreational fisheries brochure. There are however no detailed maps of specific MPAs in South Africa such that fishers can take a specific look at the extent of an MPA. A visit to the Geographic Information Systems (GIS) lab at the University of Cape Town (UCT) confirmed the difficulty in establishing the what MPAs lie where. The two technicians in the lab were aware of the difficulty around mapping MPAs and that there was not much GIS data available. They mentioned a consulting company that works a lot with MPAs and

who should have the maps. The fisheries branch of DAFF's website has been incomplete for over two years and this includes an occasionally working hyperlink²¹ to the MPA map. This is the same as the hard copy in the recreational fisheries brochure. However, the electronic map is split into two separate files of which the links do not always work²². Fishers have expressed frustration with the website, which is in many respects devoid of crucial information²³. While there are certainly other avenues for communicating the content of the website, fishers have complained about it specifically. More importantly this speaks to the wider uncertainty fishers experience regarding protected areas and MPAs in particular.

The rules determining the borders on the maps often involve police operations but are inconsistently communicated. It is also important to remember that MPAs are not the only areas that potentially curtail marine resource harvesting. Walker Bay, for example, which is to the West of Gansbaai forms part of Cape Nature's protected areas. Although this is a parastatal the protected areas under the custodianship of Cape Nature do not fall under the auspices of national government and are managed differently. Indeed, communication and cooperation in coordinating the various levels and entities involved in conservation is no easy task and one that needs improvement according to Tunley (2009).

Fishers feel powerless in the process of creating and zoning these areas despite the participatory efforts of stakeholder engagements, which I return to later. Complex institutional entities represented by DAFF officials, conservationists and representatives of organisations such as the IUCN, engaging fishers about experimental closure presupposes some degree of understanding by fishers of the regulative and constitutive content of, for example an MPA. The lack of clarity is three-fold as firstly, there is disagreement between fishers and conservationists (as well as managers and scientists) whether conservation of an area/species is necessary at all (the legitimacy of management objectives), and secondly, even within agreed objectives, there are contentions stemming from uncertainty around how certain actions will benefit the flora and fauna in question. Thirdly, there is regulative and conceptual miscommunication around things such as MPAs.

²¹

http://www.daff.gov.za/doaDev/fisheries/21_HotIssues/April2010/MarineRecreationalActivityInfo.html

²² Numerous visits to the site In January and February 2012 have had mixed results. The first two attempts the map was not available, while later attempts show a link that only works sometimes.

²³ This includes broken or empty hyperlinks to for example: the MLRA; a crime tip-off hot line; allocation of rights (which has one entry for large pelagic from 2011).

Fishers are interested in understanding and having security with regard to the lived reality of the Dyer Island proposal. This brings back Bernd's recurring reference to MPAs. His and other fishers' conflation of MPAs with the potential experimental closure of Dyer Island are important to consider in the misunderstanding arising around Dyer Island. The acronym "MPA" belies a multitude of variations throughout the history of MPAs, nationally and especially internationally. The IUCN definition of PAs (marine and terrestrial) carries with it a raft of definitions that classify these areas according to their conservation role (IUCN, 2008: 6-8)²⁴. The 1964 proclaimed Tsitsikamma MPA was a unique precursor to the later internationally enmeshed conceptualisation of MPAs and coastal PAs. However, MPAs have existed in some form for over a century; again in various guises and to serve differing interests (Sowman *et al*, 2011: 573). Under Apartheid, notes Carruthers (1989), these interests lay in racial segregation through land control. Herein lies part of the motivation behind redistributive rights and quota allocation post-1994. It is part of the government's imperative to manage natural resources to ensure a socio-economically equitable access to the environment. At the same time the long-term sustainable utilisation of natural resources also needs to be brought into effect. Apartheid-era nature conservation resulted in many cases of displacement for those classified as non-white (Ramutsindela, 2002). As a result there have been a slew of land-claims and attempts to re-establish access to protected areas, enabled by the rights afforded to all South Africans under the new constitution; many along coastal areas that give access to marine resources (Ramutsindela, 2003: 43; Tunley, 2009: 61).

The effect for established, mostly white, fishers in the post-1994 landscape, at least in Gansbaai, has been restricting to say the least. Fishers feel targeted as 'their' long-standing fishing livelihood (since before state regulation) is being eroded out from under their feet. Fishers' disdain for this situation is sometimes expressed as a race-based dislike of the "new government". The ruling ANC is *the* anti-Apartheid political organisation. While this garners support from some it is now synonymous with black government officials "taking revenge" for Apartheid by denying white fishers' livelihoods in what was sometimes termed "reverse-Apartheid" by Gansbaai fishers.

At other times fishers did *not* see the state as conspiring against them in some form of 'black revenge'. Bernd and a number of other fishers expressed an understanding for the plight of new entrants. He was frustrated with the state's short-sighted implementation method for fishing rights and quotas. As I show in the introduction, Bernd said that the policy gave anybody the opportunity to own a fishing license and quota. Many people that could not fish and tried their

²⁴ For an exhaustive definition see the original IUCN (1994) document that defines MPAs.

hand at it lost out, while others still made profits from selling their rights to desperate and unwitting people trying to enter the fishing industry. In other words the state, contrary to its overall intent, did not facilitate a constructive redistribution, which lead to short sighted or inexperienced people failing to make a living from fishing. According to Bernd this was because some people simply had never fished and had no understanding of fishing. “You can’t just get a licence and call yourself a fisher” said Bernd. Bernd also emphasised the need for basic business acumen that involved some financial planning around running and maintenance costs.

Nonetheless, Bernd said:

I would show these new guys how to fish. If they want to learn I will take them with and show them but the way it is running at the moment means that everybody is struggling because the new guys don’t know what they’re doing and those that can fish are not allowed to anymore.

Frustration with the current process and state of fisheries was a frequent topic. It does however show that fishers understand the underlying motives of redistribution. What still remains obscure are the wider policies and agreements that frame management decisions and the science informing management. The following section is aimed at situating the fisheries management along these lines.



Figure 8: Some of the more prominent terrestrial protected areas around Gansbaai (light green) including the Betty's Bay MPA (dark green). Created with QuantumGIS.

From 1990 onwards 112 marine and coastal PAs were established and classified as some form of MPA under the definition of the IUCN (1994) to which South Africa is a signatory partner through a number of international agreements (Tunley, 2009: 2). The Marine Living Resources Act No. 18 of 1998 replaced the previous regulations to bring more structured control over PAs. The term “protected area” has been capitalised on and become a proper noun, “Protected Areas (PA)”. This signals the standardisation and regulative form protected areas have taken on under newer management concepts such as EAF and supporting legislation. Part of this came in the form of 19 newly defined MPAs, which have since been expanded to 22 (Tunley, 2009: 47). There are many other protected areas, such as Walker Bay, that exercise some degree of control over coastal areas, however these 22 are managed by the state through one of the provincial conservation bodies or the South African National Parks (SANParks) and fall under one of the categories defined by the IUCN in Table 1 below.

IUCN CATEGORY		MAIN OBJECTIVE OR PURPOSE
IA	Strict Nature Reserve	Strictly protected areas to protect biodiversity and possibly geological / geomorphological features. Human visitation, use and impacts are strictly controlled and limited to ensure preservation of the conservation values. These areas can serve as indispensable reference areas for scientific research and monitoring.
IB	Wilderness Area	Large or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.
II	National Park	Large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, to provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.
III	Natural Monument	Set aside to protect a specific natural monument, which can be a landform, sea mount, submarine caverns, geological feature such as caves or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value.
IV	Habitat/Species Management Area	Protect particular species or habitats and management reflects this priority. Regular, active interventions often needed to address the requirements of particular species or to maintain habitats.
V	Protected Landscape/ Seascape	Where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value; and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.
VI	Managed Resource Protected Area	Large, with much of the area in a natural condition and where a proportion is under sustainable natural resource management. Exploitation is a main aim of the area.

Table 1: IUCN protected area management categories (IUCN, 2008: 7)

Implementation and regulation of MPAs is multifarious. Both internationally and nationally they take on varying forms, which have also changed over time in their own ways. Generally, however, MPAs tend to be regarded as marine versions of terrestrial protected areas. At the same time marine resources and maritime ecosystems are now dealt with on their own terms, largely separate from terrestrial PAs. While trying to grasp the biophysical processes of the ocean is one task in marine ecology, another is the assessment of the impacts of human interaction on the marine environment. Management advice increasingly notes the interconnectedness in marine social-ecological systems (Neis and Felt, 2000; Ommer, 2007) Herein lies my contribution to the debates as they specifically pertain to the harvesting of sardines and anchovies in the small pelagic fishery in Gansbaai and the management of the harvesting of these resources in light of the struggling penguin population on Dyer Island.

More recently MPAs are being established in deep-sea fishing areas while they were initially formed to deal with the various vectors impinging on the coast and inshore waters. This also brings me to the following two points: coastal areas form borderlands and interstices at which a range of human activities come together in a narrow spatial area with 50% of the world's population living within 31km of the shore (Small and Nicholls, 2003: 592). Secondly, the development of protected areas is always more convoluted in *marine* protected areas through the complexity brought about through the particular properties of the ocean mentioned earlier. Extending terrestrial conservation and/or management to marine areas is a problematic proposition as the two constitute places that require significantly differing approaches even though they overlap in institutional, conceptual and legislative terms (Attwood *et al*, 1997: 311). Precisely this convoluted set of trajectories makes MPAs a daunting object to deal with.

For fishers such as Bernd and those opposing the Dyer Island proposition there is a lot to take into consideration and understand. It is one thing to provide a written overview of what an MPA is, as I have done here. Yet to come to terms with an MPA that will impact on ones every-day life, every day, for life, as a fisher, is something different. It is here that the crux of the opposition to the Dyer Island proposition stands. With the sudden increase in MPAs during the 1990s in response to earlier developments in conservation concerning fish stock and marine habitats, fishers' access to the ocean became more circumscribed.

IUCN, "FAO, IMO, IWC, the legal instrument bodies of the North Sea, UNEP, UNESCO" (Kelleher, 1999: 98) amongst others constitute the international representation of protected

areas in dizzying numbers. As signatory to conventions emanating from these bodies, South African formulation and implementation is in fundamental ways linked to these. Simultaneously these are translated into a South African milieu influenced by our Apartheid history and more recently the new Constitution. Thus, it is the national management of fisheries that is of greatest interest to fishers. The local expression of international agreements and ratifications regarding MPAs is important for fishers yet often unclear beyond the lived experience of the present. Institutional processes remain beyond the horizon of engagement for most. This needs to be understood in terms of the dislocation in scale between national fisheries management and the particularities of Gansbaai. As one senior scientist at DEA I spoke to made clear when he said that an understanding of Gansbaai fishers' situation is not something DAFF are equipped or staffed to do on an ongoing basis. A senior manager in DAFF said that they genuinely want to understand the position Gansbaai fishers are in, and it is one of the reasons they first approached them in person, informally (outside of management meetings), and in Gansbaai. DAFF's scientific working group on small pelagic is important in this regard. The following section presents the work of this group with specific reference to the ongoing debates around island closures for penguins.

The Small Pelagic Scientific Working Group in the Context of Island Closure

One of the institutional processes, which I speak of here, is the Small Pelagic Scientific Working Group or SWG-PEL, run by DAFF, which is one of a number of Scientific Working Groups (SWGs) assigned to provide the scientific basis for management decisions of the various fisheries such as Hake, Crayfish (rock lobster) and hand-line. At one of the meetings I attended the group met in a large room with space for around 40 people organized in concentric, oval rings of tables and chairs. The outer circles, where I was sitting amongst more managers, scientists and industry representatives are typically taken by observers of the WG when the chairs around the table are taken. While seating is not formally managed, attendance is not open to the public. In her role as invited expert to the group, Prof Astrid Jarre arranged for me to attend and while we both sat in the rungs of observers to the group her very active role belies the passive description of "observer". Indeed there are many different kinds of members and observers: industry representatives, state fisheries managers, state and academic scientists as well as NGO representatives. I was also struck by the skewed gender make-up of the group before reminding myself that in Gansbaai, there was not one woman that worked on the boats – pelagic

or hand-line²⁵. As the meeting unfolded I noted how structured the discussions were, and that the agenda was very closely followed. People mostly spoke in turn or signalled the Chair for permission. At the same time it was also clear that some members in particular, while adhering to the rules, viewed these as formalities only and commanded more ‘airtime’ than others. While the discussion relayed from the speaker to the Chair and on to the next speaker, I could not help but draw a comparison between the boardroom and the *koppie* as both were places of gathering and decision making. Structuring the meeting is a way to ensure the various agenda points can be addressed as there are multiple and often competing objectives or interest, under time constraints. These objectives are driven by the multitude of representatives mentioned.

SWGs bring together a number of imperatives and interests as part of their function, as formally expressed in their “Terms of Reference”. These include conservation, industry (economic) and sometimes, social interests. WG specific task teams can be formed to address particular issues, and may only consist of a subgroup of representatives or “stakeholders”, in addition to experts, to provide further input into solving the issue. In other words the WG contains task teams looking at specific issues arising from the interests of various representatives or “stakeholders”. Within the SWG-PEL is the Island Closure Task Team (ICTT) which focuses on possible further island closures in the interest of securing the dwindling penguin populations. Since purse seiners such as the fishers in Gansbaai almost exclusively target sardine and anchovy, they are in some circumstances seen as competition for penguins as the birds rely almost exclusively on the same fish.

While I did not attend the SWG meetings directly related to the Dyer Island proposal, the ones I attended did provide a perspective on fisheries management process invaluable to earlier fieldwork in Gansbaai. Penguins are not arbitrary points of interest but have been identified as endangered on the IUCN red list to which South Africa is a signatory and through this informs national legislation regarding penguin conservation. At this point it is important to note that the mandates of two government departments clash in the SWG-PEL. On the one hand, DAFF is mandated with ensuring that the fish stocks remain productive for human harvesting. On the other, DEA needs to ensure conservation measures for threatened species, such as the African penguin.

Here a second task team related to penguins, the Penguin Pressures Model Task Team (PPMTT), looks at the condition of the penguin population. As one of the major penguin colonies is

²⁵ Women worked on the factory line and on the administrative side of the fishing industry in Gansbaai.

located on Dyer Island there is immediate overlap between the needs of fishers and penguins to access fish in the waters surrounding Dyer Island.

Varying interests as just outlined are important to consider in the breakdown in communication between fishers, fisheries managers, fisheries and/or seabird scientists and conservationists. EAF is a conceptual and methodological approach that aims to bring the seemingly disparate interests of those involved to fruition in line with the Marine Living Resources Act's (1998) holistic approach that aims at balancing biophysical and human livelihood needs in the context of post-1994 South Africa. Among other signatories and as an outcome of the 2002 World Summit on Sustainable Development (WSSD), South Africa committed to implementing an EAF within ten years, i.e. by 2012. This has largely been in response to the gradual acceptance of the inadequacy of single species stock assessment in light of the world wide collapse of fish stocks. During the middle of the 20th Century inadequacies of single species stock assessment prompted multi-species management. The wider ecosystem and precautionary concerns that are changing fisheries management so fundamentally today were developed in the 1980s (Peterson *et al.* 2010: i, 43) and became institutionalised in the 1990s. Poul Degnbol (2003: 39) notes that:

The precautionary principle changes the relationship between knowledge and exploitation. In an optimization scheme scientific knowledge is a useful and important but not mandatory guidance for management. Under the precautionary principle knowledge becomes a condition for exploitation in the first place and scientific uncertainty and allowable exploitation are coupled.

In other words, the formal management process needed to move away from supporting industry through yield maximisation, to becoming custodians of the wider ecosystem and human needs. While these changes are massive challenges and departures from the way fisheries were managed - requiring managers and scientists to think, act and institutionalise in very different ways - it is by no means an attempt to throw the baby out with the bath water. Stock assessment is very important and part of the wider approach to management. The varied scientific approaches to assessing fish stocks have come to include for example biologists, mathematicians and ecologists. Working together this presents an inter-disciplinary approach that is extended further by the considerations that fall under the banner of EAF with the three aims of: ecological well-being, human well-being and the ability to achieve (FAO, 2003). In more recent years, as mentioned through the earlier literature, anthropologists, historians, sociologists and economists have begun to contribute to the knowledge informing management decisions. The disciplinary boundaries of

scholarship are reflected in the cross-cutting problems in fisheries. Ecological well-being seems diametrically opposed to that of human well-being. The breakdown in communication centres on this challenge of trying to provide a balanced approach. Yet it is more than just inter-disciplinary (scholarly) or inter-departmental (state) action that is needed. The participatory stakeholder approach found in a wide range of resource management processes is an attempt at trying to bring the very people affected by changes in resources into the discussion. As I have shown earlier, this has not been without problems.

Precautionary and participatory concepts are also closely tied to issues of enforcement. This becomes very pertinent to the discussion as the state performs both an enforcement and participatory role. It is a difficult act to balance when the ongoing police and military actions motivated through law enforcement are seen by fishers to come from the same amorphous state as those proposals for participation. Here the scale is disjointed, too, but in the other direction. Fishers see scientists and managers as the ones executing enforcement decisions. The precautionary and participatory concepts are linked to enforcement and the wider international and national agreements. Central to developing a way out of the communication breakdown is the necessity of recognising the genuine attempts of individuals such as the senior manager and scientist I spoke to who expressed an urge to understand fishers' opposition and working towards a solution. Before returning to participation I sketch out some the problems around enforcement. The difficulties of this have in part been brought about through the precautionary approach in fisheries.

Enforcement is difficult for DAFF as it is resource intensive especially in a situation where fishers' relations to the state and scientists are fraught with animosity. Indeed, enforcement or the lack thereof has stifled the effectiveness of legislation in that fishers lose respect for rules that are not enforced consistently, in particular around abalone poaching in Gansbaai. Policing the ocean, its users and inhabitants effectively, is no easy task when compared to terrestrial contexts as the former cannot be fenced and its contents difficult to ascertain (Knudsen, 2009: 67). Central to enforcement is the use of force, through police and military operations, to instantiate a set of ideas around which there is a breakdown in communication. I return to this in more detail in Chapter three through participation.

Enforcement issues are compounded when taking into consideration recent changes to legislation that control access to the marine environment and its resources. In other words fishing rights, licences and quotas have undergone changes that, however well intended, have

lead to wide-spread distrust toward the restructuring of fisheries equitably. Much of this can be attributed to what fishers in many cases have found to be seemingly arbitrary changes to rules and allocation of fishing rights.

Oliver Schultz (2010: 79-80) explains rule-breaking by fishers in St Helena Bay as a form of protest against the state. Rule-breaking is something people also perform out of necessity as rights loss exacerbates (or places people in) precarious socio-economic positions. What Schultz refers to as a popular understanding of an “autochthonous right to the marine commons” speaks to fishers’ pre-legislative livelihood. Fishers repeatedly point out the state’s prohibition of a central part of their livelihoods through rules that are in many ways arbitrary. Accepting these “rules is to submit to an illegitimate power” and is tantamount to denying ones identity or existence as a fisher (Schultz, 2010: 79). In Kassiesbaai similar problems reveal that for fishers to participate is deceptively simple.

This is in reference to Marieke van Zyl’s (2008) work in Kassiesbaai. She charts the effects the MLRA and its implementation has had on fishers there. Dwindling resources have become the crumbling foundations of the residences’ livelihood. The state’s attempts at looking after the resource for future generations while providing redress through equitable access post-1994, has added strain to already precarious lives. Fishers struggle to harvest the ocean due to dwindling stocks but now also face the added challenge of having to narrow their options due to revoked fishing rights and reduced quotas. This speaks immediately to the (dwindling) plurality of fishers in Gansbaai detailed in chapter one²⁶.

MPAs and other PAs have lead fishers to feel encroached on in Gansbaai as their options for engaging in the sea have declined. As expressed by the men I spoke to, the perception of PAs and MPAs in particular, is one of being policed and having their freedom encroached upon. As fishing is such an ongoing and prominent part of their lives, the multiple regulations that have arisen are felt in many ways and continually by fishers. Yet, the MPAs that form a core part of newer ecosystem approaches to fisheries are not intended to build walls. The move away from fortress conservation-type management has been deliberate. The SWG-PEL is using island closures as a way to potentially revive the numbers of an important species of the ecosystem: penguins. Ensuring that the penguin population is improved is one part of a number of

²⁶ The argument for multi-species fishing rights as a way of improving fishers’ livelihoods needs to be handled with care. For stock assessors, making multi-species licenses available would mean having to reduce the number of rights holders and thus exacerbating the challenge of finding alternative livelihoods even more. A discussion beyond the scope of this dissertation.

objectives, along with bolstering a long-term and harvest-viable population of sardines and anchovies that eventually are envisioned to benefit society. The poor communication between fishers and managers around this nuanced issue is further worsened by past experiences, both before 1994 and the legislative process immediately after, that leave fishers with little reason to trust scientific and management decisions.

Fishers in Gansbaai have gone from harvesting a plethora of creatures from the ocean to becoming ever more specialised in the species they target. In the present, post-1994 legislative context the difficulties of dealing with socio-economic inequality and resource scarcity simultaneously is a tall order. It is my contention that these competing objectives create competing messages that leave fishers unsure. One of the ways in which these two objectives find expression in the everyday lives of fishers is through the above mentioned concepts: “participation” and “precautionary”. These are concepts in management that have come about in part due to a realisation that enforcement, especially by excluding people from PAs, cannot be sustained.

Chapter 3

Participation in an Ecosystem Approach to Fisheries

Important for EAF and the wider consensus in support of the precautionary and ecosystem sustaining approaches, is the aim of achieving a balance through stakeholder engagement. This also represents a wider theme in natural resource management that advocates what can broadly be termed “public participation”. In South Africa this finds legislative expression in the National Environmental Management Act (NEMA, 1998) and the Marine Living Resources Act (MLRA, 1998)²⁷, the development of the latter having gone through a participatory process. In this sense the participation of fishers in management is supported even at a national legislative level.

Participation has also improved much since the first years of its implementation. In this chapter I argue that participation is potentially a way forward out of the deadlock yet it is not without problems. The terms of the debate still give primacy to biophysical aspects of the “social – ecological” (Ommer, 2007: 4). In doing so, fisheries are managed without properly hearing what fishers are saying. The breakdown in communication around Dyer Island is exemplary of this situation.

Bjorn Hersoug (1998: 84-85) shows how participation in the formulation of the MLRA was difficult and in some respects unsuccessful. The reports that finally went to the minister after consultation glossed over many of the differences in perspective and power leaving the status quo of big industry and organised labour intact while smaller ‘subsistence’ and now more accurately “small-scale commercial fishers” (Hauk and Sowman, 2003: 345) who were not organised into formal entities struggled (van Zyl, 2009: 14; Isaacs, 2003; van Sittert, 2003: 200-202; Hersoug, 1998: 85). Participation, co-management and stakeholder consultation are relatively new to management processes, legislative formulation and implementation. While I acknowledge that these three terms cannot be lumped together, they speak to a broader change in tack whereby citizens are included in decisions and processes that are regulated by the state. This wide-spread move to public stakeholder participation across the environmental resource management sector is important even if to date it has been mostly unconvincing in its implementation or success (van Sittert, 2003; van Zyl, 2008; Schultz, 2010: 76, 88).

²⁷ Some of the most important Acts that also incorporate participation in some form are: The National Water Act (1998), The National Forest Act (1998) and the White Paper for Sustainable Coastal Development in South Africa (2000).

Here some of the first cracks in the participatory approach appear in national legislation implementation. Earlier I spoke of the participation of industry in the formulation of the MLRA and that the forums in which these discussions took place could not take into account the large number of non-organised fishers mostly lumped under the label of “subsistence fisher”. Participation was premised on a specific form of democracy consisting of stakeholder representatives and organisations fluent in international and national policy and processes. This bias towards an essentialised and distilled form of democracy skewed the process in favour of bigger industry and labour unions. Involving everybody in the process is a logistical impossibility which is why representatives and associations are formed. This works well for larger companies and unions that have a few well established interests. Smaller-scale commercial fishers often have diverse interests that are ineffectively represented through stakeholders and participants, which lead to their side-lining during the MLRA formulation and in subsequent participatory forums (Hersoug, 1998: 86, 87). This is not to say that there is no overlap in the objectives of the smaller quota holders and the large ones, certainly both sides are interested in profitability. However, I have shown in Chapter 1 how the plurality of fishers in Gansbaai, as small quota holders, requires a different context of plenty than big industry. How does one account for the diverse set of interests? More precisely, how does one develop a relationship not rested on “a set” of interests – the stakeholder – that presupposes existing, static interests? I offer an approach that takes the problems between fishers and management as a productive tension and that sees the situation around Dyer Island in particular as what Sarah Whatmore calls a “generative event” (2009: 588). To get there this section sketches out the underlying thinking in participatory approaches to suggest the need for a shift in thinking around participation.

Participatory approaches in the formulation and ongoing management of fisheries is important. Over the last decade it has been burdened by the ideological assumptions of its assumed inherent goodness as a panacea to fisheries problems. While praise needs to be given to the changes that now include fisheries sector representatives, it also needs to be said that the participatory approach is not without some problems. Part of this is the shape participation takes, which only has room for a certain number of participants that need to correspond to the categories fisheries management offers (see chapter one). What this results in and to which I return later, is a lack of dialogue and conversation. The current conceptualization of the process of participation is built into the wider orientation of the state. In post-1994 South Africa this means a market orientated neo-liberal reform in which export and foreign investment play a large role (Ponte and van Sittert, 2006: 12; Hara and Raakjær, 2009: 654). Opening national borders to international free trade means ensuring the products, produce and industries are also

supported to this end. This is something that requires large-scale capital, machinery and quotas, which most fishers cannot offer.

Fishers are unsure about their relationship with the amorphous state-science-management complex. On the one hand they are being restrained and exposed to rules that are inconsistently enforced and that have been derived through the application of the precautionary approach. On the other hand fishers are asked to take part in managing resources based on the participatory principle. This is why Bernd, reflecting the sentiment and words of his colleagues, asks rhetorically why he should be honest in filling out forms and 'playing by the rules'. After all, he knows firsthand that others are getting away with their dishonesty. This is not an excuse for resorting to criminal activity. Rather, in situations not dissimilar to those in St Helena Bay (Schultz, 2010) and Kassiesbaai (van Zyl, 2008), Gansbaai fishermen reject the authority and legitimacy of the state as a form of protest. With this in mind I would like to explore why it is that the participatory approach in its current form, is not contributing to a way forward by returning to the SWG-PEL.

The work involved in the SWG-PEL and by extension in other working groups and the wider management of fisheries, involves a set of arguments couched in policy as I have shown above. While there are some similarities in the way that fishers in Gansbaai and managers, scientists and conservationists communicate, there are also important differences that point to the breakdown in communication around the potential experimental closure of Dyer Island, which is common to the problems in fisheries. Central to understanding this are the discussions in the documentation of DAFF's scientific working group meetings that refer to the interconnected and long-standing discussions around stock assessment and the potential implications for fisheries management (such as closed areas).

As mentioned South Africa is a signatory to international conventions and agreements related to amongst others "responsible" fisheries management (FAO, 1995) and sustainable development. The SWG-PEL makes specific reference to these documents and agreements in relation to the decline in penguin numbers. The African Penguin population stood at possibly almost a million pairs in the 1930s on Dassen Island alone (Crawford *et al.*, 2007b). This dropped to a total of 150 000 pairs in 1956 at *all* colonies in southern Africa, which span South African and Namibian waters (Rand, 1963a, 1963b; Cordes *et al.*, 1999; Crawford *et al.*, 2009). This decrease is largely attributed to excessive egg harvesting (Shannon and Crawford, 1999). This echoes what Johan Fourie said to me and again points to the various sources of food and income people drew on

from the ocean and the plurality of fishing activity.

Initially bird eggs, like fish, were harvested as a source of food. Later along with Guano harvesting and Seal clubbing on Dyer Island these operations became commercialised and vastly expanded. While the undeniable impact of such exacting harvesting lead to the closure of egg harvesting in 1967 (*ibid.*) the penguin population continued to drop and still does except for a brief increase in penguins that saw 61 000 pairs breed in 2001 (Crawford *et al.*, 2009). By 2009 the population had sunk to 21 000 pairs in South Africa.

The decrease in the penguin population has slowed yet not halted. Simultaneously the move to more holistic and encompassing scientific and management understandings of fish stocks requires inclusion of a wider set of species and processes, beyond those of the fisheries' target species, to be taken into consideration, which is one reason why the *Ecosystem Approach to Fisheries* has found wide-spread (although not undisputed) acceptance. Penguins, like seals and dolphins are all conservation priorities. They, like fishers target small pelagic fish and are a source of frustration for fishers who say that dolphins, seals and penguins, chase the fish apart making them difficult to net. Kobus explained to me that they get angry with seals that get stuck in their nets, which costs time and money. Furthermore, he noted that there are too many seals and penguins and thus fewer fish for him to catch, on the other hand scientific studies suggest that seabirds are actually only consuming a minor part of the fish production (Jarre *et al.*, 1998; Watermeyer *et al.* 2009). For fishers it is a seemingly contradictory move to bolster predators that target the same prey as fishers. Yet this is central to an ecosystem understanding of the resource base for fisheries. The interactions between various biotic and abiotic entities leads to the abundance of small pelagic fish on which fishing industries have been built. Of course long term climatic fluctuations, which are largely beyond our control, also contribute to this.

SWG-PEL, EAFWG, ICTT, and PPMTT meetings, documentation and research show a strong link between penguin population health and the availability of food. Various data presented points toward this indirectly, and modelling confirms the link for Robben Island. Studies specific to certain areas and population variables present a view that makes for a strong case that penguins in general are impacted by purse-seine fishing both in the general area where penguins forage, and in the immediate vicinity to colonies during the breeding season. However, there is still uncertainty as to how far the results for one particular colony (e.g. Robben Island), can be transferred to another such as Dyer Island.

Ecosystem management has not always included humans the way that EAF does²⁸. EAF aims to balance human and natural activity. Human activity, as world-wide overfishing has shown, has detrimentally affected the natural environment. Yet this should be understood beyond a cause and effect model in which fishers are the cause of the (environmental) effect. The move away from protecting natural environments by excluding people from them is important as we are part of and dependant on the ecosystem. When fish distribution or numbers change drastically they become unviable to catch and this impacts on fishers lives immediately as their livelihood is dependent on the amount of fish caught. In the same way the rules and regulations governing fisheries influence fish populations and have been part of controversial instances of stock collapse as mentioned in the introduction. In other words, fishers do not simply over-fish but are part of a wider set of institutional and conceptual processes that influence how fish are caught. Over-fishing is not simply the cumulative effect of fishers harvesting too much fish – it needs to remain in its social and political context. However, sardines and anchovies exist as part of an ecosystem made of interconnected and interdependent parts and processes. Changes in one part of the system *can* result in a series of reactions across the ecosystem.

Island closure is motivated by the importance of penguins to the ecosystem and due to their listing as an endangered species by the IUCN. Management is aware that a closure of the island would not be accepted by fishers without issue. This awareness comes from prior engagements with fishers. A large part of DAFF working groups including the SWGs are attended by industry representatives to participate in management decisions. In this case the most prominent being the South African Pelagic Fishing Industry Association (SAPFIA). This is the space in which fishers have the opportunity to contribute to management decisions that influence the TAC. Yet as Hara and Raakjær (2009) note in their overview of the policy changes to the industrial fisheries of South Africa, this forum works well for most of those represented by SAPFIA as it involves a 16 year relationship between the biggest companies and fisheries managers that has developed a form of trust and common language. Furthermore, the larger companies represented here also contract scientifically trained consultants, who enable them to better understand the mathematical, biological and ecological thinking informing such things as the TAC. Newer entrants (since the revision of fishing rights and quota allocation in the early 1990s) are made up mainly of smaller fishers. In other words these fishers are not organised or represented as centrally as SAPFIA and cannot afford to employ consultants to translate the at times highly technical discussions. Although these fishers are organised into associations they

²⁸ As I showed earlier human well-being is one of the three central tenets of EAF.

represent a far more diverse membership which means that interests often vary widely (Hara and Raakjær, 2009: 654). These fishers note that in attending the SWG-PEL they struggle to make their concerns valid and do not follow the technical discussions. Thus, they do not attend meetings for fear of being misunderstood, which would exacerbate an already tense relationship. As one DAFF official mentioned to me, one of the representatives for the factory and fishers for Gansbaai often does not attend meetings such as the ones dealing with penguins (and by extension island closure).

Another assessment that involved stakeholder interviews is the Ecological Risk Assessment (ERA) review. As a tool for implementing the EAF the aim of the ERA is also to communicate what the EAF is (Nel et al, 2007: i). One of the concluding comments for the small pelagic industry in the report on the ERA review was that much more social and economic data was needed (Nel et al, 2007: 67). Although much more has been done and the inclusion of fishers in management and policy formulation has improved, there is little substantial change compared to that conducted in the late 1990s in the run-up to the first MLRA (1998) formulation (Sowman et al, 2011: 575).

In a research project (“Knowfish”), focussing on implementing an ecosystem approach to fisheries management, which includes “human wellbeing” as one of the three central tenets, stakeholders were interviewed to better understand what their interests, perceptions and knowledge of the fishery is (Fairweather et al, 2006: 649). Much of the data drawn from interviews with 58 skippers, nine crew members and two managing directors, correlates with what I experienced in Gansbaai. That is to say, fishers are concerned for the health of ecosystems and agree with the need to manage the fishery cautiously. The sticking point over which industry disagrees with conservationists is sea birds, which include the African penguin (Fairweather et al, 2006: 655). Conservationists see the need to take sea birds’ diet (largely small pelagic) into account in managing the fishery and reduce the TAC to ensure sufficient food for penguins. Fishers on the other hand are opposed to this.

From this perspective fishers opposition to the closure seems unreasonable considering the dire situation of the penguins; an important species for the ecosystem. The discussion however is centred on the biophysical aspect of penguin numbers. An ecosystem approach such as the one proposed by the EAF sets human well-being along-side that of the biophysical environment (Nel et al, 2007: 5). Participation has taken place on the terms of a biophysical understanding of the ecosystem. If we are to take an holistic, precautionary and participatory approach in ensuring

sustainable harvesting, participation needs to move beyond that what it currently is. This is in agreement with what Fairweather and others concluded in their 2006 article on stakeholder knowledge of the small pelagic fishery in South Africa (2006: 657). Various stakeholders (scientists, fisheries managers, fishers, and fishing company directors) considered resource management as something that goes beyond biophysical data and that socio-economic data should be incorporated too. The misunderstanding around Dyer Island is an exemplar of the importance in expanding the discussion even further.

Fishers in Gansbaai occupy an unusual position as I have shown through the plurality of their activities. Yet as part of a long-standing small pelagic fleet that operates as a co-operative with the local factory, fishers here are easily lumped into the same group as the big companies. Thus their position is seen as one that enjoys the long-standing and healthy communication between big industry and fisheries managers. Their multiple additional fishing practices fall out of view for management. This helps explain why the representative or fishers more generally do not attend meetings; they feel unheard or only partially heard. While open-ended interview and industry-wide interviews have been undertaken (*ibid*) they only pertain to a portion, the biophysical portion of the wider picture. The reality for fishers in Gansbaai is one of gradual curtailment of fishing rights and access to fishing grounds over the 20th Century.

This is something that has not come out of the participatory stakeholder approach so far. The realisation that socio-economic issues are important is a first step towards making room for fishers' lived reality as underpinned by a multitude of daily practices that have become stratified and curtailed. My argument here is that participation, as a stakeholder, takes place on the terms of fisheries management. Fishers are asked to stake their claim in the fishery. Remembering the inadequacy of regulative categories shown earlier, makes this an impossible task for fishers. The plurality engagements with the sea means that Gansbaai fishers' stake is in fisheries and not exclusive to purse seining. Similarly, participation, to take part and be part of the management of fisheries, is not the experience of fishers. It is also a concept that has been brought in without asking fishers what they consider participation to be. There was no participation in defining what participation should be.

This draws in a wider set of experiences that in southern Africa (and other parts of the world) have come under the banner of Community Based Natural Resource Management (CBNRM). This is an unashamedly blanket phrase that encompasses a wide range of approaches that involve the protection of natural resources through people-centred management. In other words,

despite their overlapping and contextually specific applications, the common thread in all these approaches is the joint development of conservation goals with those living in or nearby the area in question (Adams and Hulme, 2001: 13; Whande, 2003: 1). This can in one way be accounted for as a move in conservation away from single or even multiple species (Büscher and Whande, 2007: 25) to the kind of ecosystem approach presented here which, appreciates the importance of biophysical complexity and that fish stocks can only be accounted for through the connections fish have to their wider environment. The same goes for humans as our actions can and do alter the environment. Yet, the politics of fisheries requires a wider appreciation of the situation in which biophysical activity takes place.

Thus it is important to consider how it is that EAF also encompasses the attempt to move away from top-down, 'fortress conservation' that Brockington (2002) shows as having been the norm. The industrialisation of the South African fisheries earlier in the 20th Century (see chapter 1) along with the ANC's neo-liberal agenda also reflects the move in conservation and resource management fields to one that is underpinned by neo-liberal economic approaches. Projects such as Zimbabwe's CAMPFIRE (Communal Areas Management Program for Indigenous Resources)²⁹ has signalled that there are some positive outcomes (Murombedzi, 2001) while Hauk and Sowman (2003) conclude with some positive material for South Africa's marine co-management. Bram Büscher and Webster Whande add that from the "1970s onwards, it became clear that the top-down preservationist management discourse had to be supplanted by a more bottom-up inclusive and participatory sustainable use narrative" (2007: 26).

The plurality of fishing practices that go unaccounted for in management categories come up again in attempts at participation. Fisheries are currently managed by trading off the high abundance of its target species (anchovy and sardine) against corporate objectives (e.g. profits). Yet it is my contention that if full participation is to take place then stakeholders, such as the fishers here, cannot be reduced to interests in accordance with current fisheries based categories. In other words, looking at the small pelagic fishery will not give insight into issues extraneous to such a focus yet that nonetheless impinge on it. The stakeholders participating in a given fishery are confined to that fishery even when their daily activities exceed these in many ways. Fishers have to stake their claim with reference to a specific fishery, which for fishers in Gansbaai is not always possible as their varying fishing practices means that in the case of the proposed closure of Dyer Island there are a number of other fishing activities besides purse-seining that get taken

²⁹ At least overall, Hauk and Sowman (2003: 334) see co-management as an improvement over prior top-down management.

into account.

In addition, the closure of Dyer Island is perhaps not the simplest of things to understand as it is based on a long-running set of international and national veins of thinking and acting in which MPAs and protected areas in general have undergone broad and nuanced changes especially since the 1980s. Poul Degnbol (2003) concludes that the discourse of rational, precautionary and efficient fishery management has been a trade-off in scale that has led to a loss of legitimacy for fisheries management. Especially industrialised fisheries that rely on fine-scale spatial assessments have seen a reduction in the detail of management due to a focus on wider ecosystem concerns. The kinds of challenges presented by multi-scale approaches is something that we have addressed in a recent paper (Anderson *et al*, 2011) that takes the fieldwork of five Masters students³⁰ to find points of commonality as a basis for starting a dialogue between fishers and fisheries management.

Enforcement of the law and PA boundaries looms large in the experiences of fishers in Gansbaai. Bernd's stories of nature reserves closing access to places his family frequented in his youth and the removal of fishing rights when fishers filled out forms honestly are examples of this enforcement as a one-way street. These kind of policing actions close down dialogue as they are based on the rule of law, that when broken needs to be punished. The enforcement of fishing rights and the allocation of the TAC

Participation, in South Africa, has not always benefitted fishers as many still feel excluded from the (democratic) state's processes of fisheries management (Anderson, 2011; Rogerson, 2011; Schultz, 2010; van Zyl 2008). Van Sittert (2003) argues that the co-management literature around fisheries has been uncritical of the state due to a lack of historization through which the state is viewed as an a historical institution. The state, he explains, is never conceived of as irrational, partial or particular in the literature that argues for co-management in South Africa. However, the widely documented success of larger companies in maintaining their dominance in the South African small pelagic fishery, speaks for just this kind of an assessment. My contention here though is not that the management of fisheries is irrational or impartial (*ibid*). Rather, acknowledging that Gansbaai fishers' practices and fisheries management are changing things. I show this in chapter one through the plurality of fishers and in chapter two through the rise of participation and the precautionary principle in management. The enduring thread throughout

³⁰ Kelsey Draper (Walvis Bay), Jennifer Rogerson (Lamberts Bay), Tarryn-Anne Anderson (Kalk Bay), Marieke van Zyl (Kassiesbaai), Sven Ragaller (Gansbaai) and Greg Duggan (Stilbaai)

the 20th Century and more recently with the Dyer Island proposal has been the curtailment of fishing techniques and access to the ocean. The breakdown in communication is centred around this kind of controversy in which participation has served as a legitimating tool for the management of fisheries, but has not achieved any of trust in science-lead management. Fishers in Gansbaai have little trust in the processes of the new dispensation lead by the ANC and fisheries management. Thus Dyer Island, despite only being a potential experimental closure, is treated as an MPA, which in fishers' experience is the worst kind of curtailment.

The legitimacy of scientific claims is what Sarah Whatmore (2009) takes as a starting point around knowledge disputes – instances in which public dispute around environmental issues is directed at the claims being made by the scientific knowledge informing policy interventions. Her contention is that we need to approach these instances of disagreement and controversy, when “environmental science and policy fail to convince those affected by what is at issue” as “generative events” (2009: 588). Distrust and scepticism are opportunities to engage with constructively to build new knowledge. By including non-scientists, such as fishers in Gansbaai, in the process of tracing knowledge claims it allows the claims central to the controversy to become visible, instead of being hidden in the policy process. Moving away from the de facto approach to disputes in which state process and scientific knowledge are a priori means is important. Mapping the claims of those involved and affected by the issue at hand allows these to be questioned in the context of political and social events underpinning the issue. This brings in the importance of inter-disciplinary work in the process of creating generative events. In other words the need for social scientists to contribute a unique appreciation of ‘the political’ and ‘the social’ which is always present but slippery to handle in knowledge controversies. Finally, it is important to move to an experienced-based approach to bring all the parties together. Whatmore’s (2009: 594) example of flooding illustrates that the people involved in the issue need to work at the site of the issue – the town where the flooding occurred.

In the context of southern Africa’s fisheries and the Dyer Island proposal in particular, “generative events” becomes a useful concept. The breakdown in communication around Dyer Island is an opportunity to work towards something similar. Fishers reject the policy process that claims to include them because they feel continually curtailed, a situation that has gone unheard despite or perhaps because of its seemingly natural progression as part of the wider developments in fisheries across South Africa.

The graduate group mentioned earlier has shown that social scientific contributions and Social

Anthropological ones in particular, based on experiential research, cast new light onto the situations of fishers, and fisheries more generally in southern Africa. Broadly sociological projects and studies mentioned in the introduction have done so too in other settings across the world. In particular the kind of participant observation fieldwork in which this ethnography exists, offer an unusual way of communicating the experiences of those concerned. Furthermore, the kind of interdisciplinary projects we have contributed to allow for an appreciation and respect of what 'other' disciplines do and, if anything, are pedagogical lessons.

The participatory approach within the "human wellbeing" part of EAF signals an attempt to take human issues as both related and integral to ensuring the long-term stability of ecosystem resources. As I have shown, attempts through participation have at times fallen short. Yet as the productive tension between the interdisciplinary challenges of EAF shows there is merit in turning a dispute, the breakdown in communication, into a generative event. I caution though of falling into the trap of simply applying one model or experience to another situation in which the constituting components might seem to be the same yet their own histories and situation are quite different (van Sitter, 2003: 215).

While I do not want to paint the diverse expressions of participation and co-management with the same brush, there are categorical assumptions that are operationalised when publics take part in science-informed state procedures (Whatmore, 2009). Here I am thinking of the categories that fishers exceed through their plurality. According to Whatmore we need to move away from engaging issues on the grounds of established ontological assumptions. Bringing experts such as scientists and the officials of government into conversation with the people at the centre of the issue is the first step. It needs to go further though, which is why she calls for experience-based knowledge where everybody gets first-hand experience of the situation. This is also to create the space in which new conversations can open up by having people put their knowledge claims on the table, open for discussion outside of the institutional structures and legitimating fields that privilege categories already set.

In Gansbaai 'the situation', so to speak, is the possible experimental closure of Dyer Island. Having all the parties there to speak to one another can fast fall into the kind of Social Impact Assessment (SIA) and public participation processes required, by law, for many activities. As the officials that travelled to Gansbaai learnt, even though they were there on an informal basis to discuss the prospect of island closure. To create a fertile atmosphere for discussion, fishers need to move away from the kind of categorical rejections based on passed curtailment and listen to

what exactly is being suggested. Fisheries managers need to appreciate the position of fishers in Gansbaai as unique, and while this has been acknowledged in principle (Coetzee et al, 2010), it is my hope that this thesis provides information that goes beyond the anecdotal generalities of an aged fleet of small wooden purse seiners and high tension due to abalone poaching and fisheries management fallout. Without falling into the slippery slope of relativism, my argument here is for the move away from viewing Gansbaai as part of the Benguela ecosystem to one where Gansbaai – as a place of varied interests from tourism and poaching to fishing and nature conservation – is placed at the very centre of its marine social-ecological system.

Prioritising small-scale particularities ensures that concepts operating at a larger scale, such as “the ecosystems”, do not obscure these. This allows a wider set of concerns, the political and social, to be taken into consideration in the same way the ecosystem is. The unique case that Gansbaai presents through the co-operative and the plurality of fishers’ practices is a good reason to move participation in its current form to a conversation in which those concerned put their knowledge claims on the table. Bernd and Masebhuke’s relationship is important to remember for the respect generated between them is based on dialogue. If this dialogue is used as a starting point to work constructively with the wider tensions and miscommunication around Dyer Island, there is an opportunity to turn this into a generative event.

Conclusion:

Despite the problems facing a participatory management of fisheries that seems to paint a set of polarised interests, there are instances of dialogue that point to a way forward. Bernd and Masebhuke are one such example where ongoing conversation is happening. It is important to note that this is happening 'on the ground' in Gansbaai, at the proverbial coal face, where tensions between fishers and authorities are at their highest. What allows this relationship to continue is the acknowledgement in the pedagogical value that both contribute to the relationship. Masebhuke and Bernd help each other with various tasks relating to each of their positions in relation to fisheries. Masebhuke's inherent working knowledge of fisheries from a DAFF perspective provides a sound board for Bernd to better understand an institution that at times completely fails to communicate with citizens. Bernd, a skipper with many decades of fishing experience also helps Masebhuke as someone at the start of his career still learning about fishing.

The breakdown in communication between fishers in Gansbaai and fisheries management is an exemplar of world-wide fisheries problems. Fish stocks in most parts of the world have seen a drastic decline of abundance, which came to a head with the Canadian Cod stock collapse in the 1980/90s. Part of the problem identified in that case was the lack of communication and animosity between fishers and fisheries management. What were at the time the most rigorous and detailed management procedures nonetheless lead to their sudden collapse. Ommer's (2007), Neis and Felt (2000) and Finlayson (1994) are some of the studies that show the complexities in fisheries management. Many of the conclusions these point to the need for new knowledge that recognise and take seriously the importance of fishers' knowledge/experience in managing fisheries. The need to manage fisheries in less top-down and more inclusive ways has been part of the post-1994 South African policy formulation process. Two new pieces of legislation, NEMA and the MLRA have attempted to overcome the inequality of Apartheid through redistribution of fishing rights and quota allocation. This has frustrated many fishers in Gansbaai as it has resulted in the loss of fishing rights for some. More recently the breakdown in communication has surfaced again through the proposed experimental closure of Dyer Island, which fishers oppose.

I have used Dyer Island as an entry point into the arena of fisheries management and fishers' experiences. The breakdown in communication around Dyer Island in particular has been the

central theme in exploring this and forms part of the group of colleague's work in towns from Stilbaai on the south-eastern Cape Coast to Walvis Bay in Namibia on the West Coast of Africa. These individual projects are under the guidance of Astrid Jarre and Lesley Green in an interdisciplinary project that seeks to find new ways of understanding fisheries. The contribution Anthropology makes to this is through careful attention of the lived reality of those we spend time with during fieldwork. The participant observation methodology I used on a daily basis over a total of two months in Gansbaai gave me a glimpse of what it is like to be a fisher. The daily routines that are involved and as I have shown extensively the multitude of fishing practices. The stories, especially those of older fishers, so generously shared with me opened new avenues of interest which for example have led to the narrative of curtailment.

The time I spent with fishers and the difficulty of building rapport pointed to the wider problem of mistrust that is part of the breakdown in communication. Fishers, whom I presupposed to be purse seiners when I arrived in Gansbaai, showed me a diversity of fishing practices that they engaged in on a regular basis. Besides purse seining, fishers also practice hand-lining and angling. Beach seining, until recently, was part of their repertoire too, and at an earlier point egg harvesting as well. However, the industrialisation of fisheries brought about increasing complexity in governance (van Sittert, 2006; Scott, 1951), and the gradual categorisation of fishers. Fishers specialised and had to narrow their fishing practices. Thus they moved from being fishers to being categorised according to the fishery they were registered for. The discreet management groups currently deal with fishers as though they only engage in one type of fishing. My fieldwork experiences, however, showed that fishers would sometimes hand-line shortly after returning from a purse-seining trip. Fishers' plurality is a key component of their approach to dealing with uncertainty in fish stocks and is why they resent the categorisation that does not recognise their plurality. The curtailment of fishing practices over the past 50 years in particular, shows a series of restraints such as the closing of egg-harvesting; mesh-net size reduction; and reduced fishing rights and quotas.

Chapter two takes another form of curtailment as contributing to the breakdown in communication. The articulation of the experimental closure is taken up by fishers as meaning an MPA. MPAs and PAs have also gradually curtailed fishers' movement at sea and along the coast where angling spots have come under the control of nature conservation such as Walker Bay Nature Reserve. The fortress conservation approach to PAs that has dominated how conservationists and fisheries managers have often excluded people, is readily apparent to fishers. Bernd related how he felt that conservation only excluded people. Part of the problem here lies

in the complex international and national discourse of PAs and MPAs in particular that is not very accessible for fishers. The nuances and multiple roles MPAs play is lost unless there is a thorough understanding of the concept, which for second or third language English speakers (which, except for a few, is the case in Gansbaai) is not easy³¹. The experimental closure of Dyer Island is by no means an MPA though, and has a specific purpose with regard to the penguin colony on the island.

As a key part of the ecosystem, the continued reduction in penguin numbers over the course of the 20th and now 21st centuries has left fisheries scientists concerned about the impact further reductions in penguin numbers could have on the ecosystem and by extension fish stocks. The competition for food between the small pelagic fishery and penguins could be part of the latter's population problem.

The curtailment of fisher's practices along with those of PAs has left fishers with less and less room for manoeuvre. The ability to negotiate and take part in the formulation and management of fisheries is also the focus of chapter three. More precisely, the concept of participation of stakeholders has taken a central, if unsuccessful, role in the early post-1994 fisheries management process. In this initial process and the ongoing management of those processes, and despite the considerable efforts of some DAFF officials, participation has been criticised as simply going through the motions and formalities to lend legitimacy to fisheries management (Hersoug, 1998; Schultz, 2010) in the context of international co-management and national redistributive drives in fisheries (Ponte and van Sittert, 2006; Hara and Raakjær, 2009).

Since 2003 the move toward implementing an EAF has maintained the participation principle. In the documentation outlining EAF as a concept for implementation in South African fisheries, participation is part of three main pillars: human well-being, ecological well-being and achievability. As an interdisciplinary approach EAF has taken steps to better bring fishers into conversation with fisheries management.

The importance of how to communicate island closures and PAs in general cannot be overstated, as the plan to implement more is outlined in the National Protected Area Expansion Strategy (NPAES, 2009). While I do not take NPAES as given, the seemingly opposing goals of human and ecological well-being in EAF and similarly the constitutional right to have the

³¹ DAFF does communicate many documents in multiple languages and conducts road shows but some things, such as the IUCN (e.g. 2008, 1994) protected area management documentation is not available in Afrikaans for example.

environment protected (Section 24 [b]) while also having the right to social security (Section 27), along with the growing pressure we place on our natural resources means that disputes will arise. As I have alluded to, it is important to use these opposing interests as productive tensions.

The relationships amongst fishers I spent time with are closely knit. Crew members and skippers trust each others' judgement, which is perhaps part of the hierarchical life of working on a fishing boat. Nonetheless, relationships were no doubt at times strained in the wider context of scarcity, which has relatively immediate impacts on fishers, who are largely paid by the amount of fish caught. In this sense, hierarchies flattened out as became evident in discussions and at times very heated disagreements. Crew members trust their skipper's decisions, not always without some discussion, as these are usually carefully chosen, experienced fishers. It is also important to remember that the boats operate as a team and thus decisions are reached via a process of consensus. At sea this was particularly interesting to experience as the radio chatter rattled along at a phenomenal pace, with enough jargon and code words that I had to constantly ask what was going on. Skippers are generally highly respected fishers and trusted by their colleagues.

As a possible way forward along the lines of productive tensions and following Whatmore's (2009) notion of generative events, skippers present a starting point as representatives. One of the critiques of earlier participatory approaches in South Africa was that representatives were unrepresentative due to the wide interests of fishers. While I am calling for the use of representatives as well, skippers are a largely accepted representative of fishers here. Working with hand-line and purse seine skippers would form a logistically manageable 30-50 people. Let me say from the outset that this is not an argument for hashing out problems by "workshopping" them. That would be an untenable position as I have shown through the general mistrust against "state representatives", which expressed itself so vividly on my very first day on the koppie. In the same way that I overcame much of the mistrust in building rapport with several fishers, it will be possible to foster some degree of communication and later, trust, that will give meaning to the concept of "generative events".

Bernd and Masebhuke's relationship is one that points to the possibility of this suggestion. Fostering an appreciation of each others' interest and knowledge has partially taken place through the mapping of the areas around Dyer Island that are used for fishing, yet there is a need to also explain what it is that conservation biologists do to understand penguin populations along with the wider importance of penguins as part of the ecosystem. After all, conservation is not about the moral right of animals and ensuring that these have proper living conditions.

Rather, conservation is about ensuring or sustaining the natural environment for our, human, needs and interests, which seems to strongly overlap with preserving the populations of animals occupying the areas we come to inhabit. Simon Schama, in his extensive *Landscape and Memory* (2004), makes clear that conserving habitats has its roots in peoples' own interests, and this is also spelt out in FAO's EAF guidelines (2003:48) as a contribution to sustainable societal development

Having a common understanding of each others' interests allows the continuation of the conversation in the direction of finding a way in which both fishers and penguins can thrive. What I am suggesting is that instead of having a blanket 20km radius extending around Dyer Island, fishers together with biologists could attempt to come up with a more fine-scale map or develop further research that would answer questions arrived at together. As I have said, this is no quick and easy process and rests on an initial, sustained engagement amongst those involved to build rapport.

This also brings up the question of facilitation, which in itself, in the current Environmental Impact Assessment process carried out by private consultants on developers' contracts are inherently susceptible to questionable credibility as one EIA practitioner has admitted and explained to me. Similarly a facilitator employed or contracted by DAFF would in all likelihood and for understandable reasons not be accepted by fishers. Project CAMPFIRE in Zimbabwe was based on university and NGO collaboration. Yet, while I did manage to build rapport with fishers my affiliation to UCT shows that there is little trust toward university affiliates. However, this may be due to the strong presence of UCT scientists advising the SWGs in DAFF. Thus the University of the Western Cape (UWC) might be perceived as an acceptably neutral arbiter. Another suggestion is to work with NGOs, such as Masifundise or WWF's "Sustainable Fisheries" program. Either way, in a situation such as the one I encountered in Gansbaai, which is characterised by huge mistrust partly based on past experience, and aggravated by organised crime within the immediate area, building rapport and mutual respect, to begin fostering mutual trust is vital to situations such as the one around Dyear Island. Only when communication is functioning, can one think of balancing the various interests and objectives involved in a meaningful way.

Bibliography:

- Aide Memoire of the joint meeting on 13 January 2010, 2010-EAF01. Unpublished document of Marine and Coastal Management (now DAFF and DEA: Oceans and Coasts). Pgs.1-2.
- Anderson, T. 2011. *Tracking the Movement of Fish: Skipper's Logbooks and Marine Knowledges in Fisheries Management*. Unpublished MA thesis. Department of Social Anthropology. University of Cape Town.
- Anderson, T; Draper K, Duggan G, Green L, Jarre A, Ragaller S, Rogerson J and van Zyl, M. 2011. Conservation Conversations: Initial findings on contestations over fisheries science on the Benguela Coast. *Working Paper*.
- Attwood, C. G. 2010. Manager at abalone farm wins prestigious award. *Maritime Southern Africa*. October/November. P. 13.
- Attwood C. G., J. M. Harris, J. M. Williams. 1997. International experience of Marine Protected Areas and their relevance to South Africa. *Southern African Journal of Marine Science*. 18: 311-332.
- Attwood, C. G., B. Q. Mann, J. Beaumont, J. M. Harris. 1997. Review of the state of marine protected areas in South Africa. *Southern African Journal of Marine Science*. 18: 341-367.
- Anshen, R. N. 1987. *Biography of an Idea*. USA: Moyer Bell.
- Barnard, E. 1986. *'n Kultuurhistoriese Beeld van Gansbaai en Omgewing*. Unpublished thesis (Masters), University of Stellenbosch.
- Blackburn S. 1999. *Think*. Oxford, Oxford University Press.
- Bradshaw, W. Y. and Huang, J. 1991. Intensifying Global Dependency: Foreign Debt, Structural Adjustment, and Third World Underdevelopment. *The Sociological Quarterly*. 32(3): 321-342.
- Brockington, D. 2002. *Fortress Conservation: the Preservation of the Mkomaži Game Reserve, Tanzania*. James Currey, Oxford, UK.
- Burger, O. E. 1966. General Comments and Announcements. *Agrekon*. 5(1): 33-66.
- Bush, S. R. 2008. Editorial. *MAST*. 7(2): 5-7.
- Carruthers, J. 1989. The creation of a national park, 1910 to 1926. *Journal of Southern African Studies*. 15:188-216.
- Coetzee, J, Merkle, D, Twatwa, T, Mushanganyisi, K, Phillips, M, Shabangu, F. 2010. Results of the 2010 Spawner Biomass Survey. *Branch: Fisheries Scientific Working Group – Small Pelagics*. Department of Agriculture Forestry and Fisheries. MCM/2010/SWG-PEL/61.
- Cordes I., Crawford R. J. M., Williams A. J., Dyer B. M. 1999. Decrease of African Penguins at the Possession Island group, 1956-1995 – contrasting trends for colonial and solitary breeders. *Marine Ornithology* 27: 117-126.

- Crawford R.J.M, Whittington P.A, Martin A.P, Tree A.J, Makhado A.B. 2009. Population trends of seabirds breeding in South Africa's Eastern Cape and the possible influence of anthropogenic and environmental change. *Marine Ornithology*. 37: 159–174.
- Degnbol, P. Science and the User Perspective: The gap co-management must address. In Wilson, W. J., Raakjær Nielsen, J., Degnbol, P. (eds) *The Fisheries Co-management Experience: Accomplishments, Challenges, Prospects*. Kluwer Academic Publishers. Pp: 31-49.
- Dolley, C. and Mjekula, L. 2010. Police Warn of Poaching War. *IOL*. May 19. Available from: <http://www.iol.co.za/news/south-africa/police-warn-of-poaching-war-1.484401> [Accessed 31/01/2012]
- Duggan, G. 2012. *In the Realm of the Kob Kings: Knowledge and Dialogue in a Small-scale commercial handline fishery*. Unpublished MA thesis. Department of Social Anthropology. University of Cape Town.
- Easterly, W. 2005. What did structural adjustment adjust? The association of policies and growth with repeated IMF and World Bank adjustment loans. *Journal of Development Economics*. 76: 1-22
- Fairweather T.P, van der Lingen C.D, Booth A.J., Drapeau L, van der Westhuizen J.J. 2006. Indicators of sustainable fishing for South African sardine (*Sardinops sagax*) and anchovy (*Engraulis encrasicolus*). *African Journal of Marine Science* 28: 661–680.
- FAO. 1995. Code of Conduct for Responsible Fisheries. *FAO Fisheries Technical Paper 350*. <http://www.fao.org/WAICENT/FAOINFO/FISHERY/agreem/codecond/codecon.asp>.
- Hara, M and Raakjær, J. 2009. Policy evolution in South African fisheries: the governance of the sector for small pelagic. *Development Southern Africa*. 26(4): 649-662.
- Hauck, M and Sowman, M. 2003. *Waves of Change: Coastal and fisheries co-management in Southern Africa*. University of Cape Town Press: Lansdowne.
- Hauck, M., and M. Kroese. 2006. Fisheries compliance in South Africa: A decade of challenges and reform 1994 – 2004. *Marine Policy*. 30(1): 74-83.
- Hersoug, Bjorn. 1998. “Fishing in a Sea of Sharks: Reconstruction and Development in the South African Fishing Industry” in *Transformation* 35. <http://www.transformation.ukzn.ac.za/archive/tran035/trans035004.pdf>
- Holling, C. S. 1973. Resilience and Stability of Ecological Systems. *Annual Review of Ecology and Systematics*. 4: 1-23.
- Howard, J A E, Jarre, A, Clark, A E, Molony, CL. 2007. Application of the sequential t-test algorithm for analysing regime shifts to the southern Benguela ecosystem. *African Journal of Marine Science*. 29 (3): 437-451.
- Hutton, J, W.M. Adams and J.C. Murombedzi. 2005. Back to the barriers? Changing narratives in biodiversity conservation. *Forum for Development Studies*. 2: 341–370.
- Huxley, T. H. 1883. *Inaugural Address. The Fisheries Exhibition Literature, International Fisheries Exhibition*. London, 4:1–22.

- Irwin, A. 1995. Science, Citizens and Environmental Threat *In* Allen Irwin *Citizen Science*. London, Routledge: 37-61.
- Isaacs, M. 2003. *Understanding the social processes and politics of implementing a new fisheries policy, the Marine Living Resource Act 18 of 1998, in South Africa*. PhD thesis, Programme for land and Agrarian Studies, University of the Western Cape.
- IUCN World Commission on Protected Areas (IUCN-WCPA). 2008. *Establishing Marine Protected Area Networks—Making It Happen*. Washington, D.C.: IUCN-WCPA, National Oceanic and Atmospheric Administration and The Nature Conservancy. 118 p.
- Jackson, M. 1989. *Paths Toward a Clearing. Radical Empiricism and Ethnographic Inquiry*. Bloomington and Indianapolis: Indiana University Press.
- Jarre (Teichmann), A., Shannon, L.J., Moloney, C.L., Wickens, P.A. 1998. Comparing trophic flows in the southern Benguela to those in other upwelling ecosystems. *Southern African Journal of Marine Science*. 19: 391-414.
- Kelleher, G. (1999). *Guidelines for Marine Protected Areas*. IUCN, Gland, Switzerland and Cambridge, UK. xxiv +107pp.
- Knudsen, S. 2009. *Fishers and scientists in modern Turkey: the management of natural resources, knowledge and identity on the eastern Black Sea coast*. New York: Berghahn Books.
- Lemm, S. and C. Attwood. 2003. *State of Marine Protected Area Management in South Africa*. WWFSA, Cape Town.
- Murombedzi, J. C. 2001. Committees, rights, costs and benefits. Natural resource stewardship and community benefits in Zimbabwe's CAMPFIRE Programme, *In African wildlife and livelihoods: The promise and performance of community conservation*, edited by Hulme, D. & Murphree M. Oxford: James Currey.
- Neis, B. 1992. Fishers' Ecological Knowledge and Stock Assessment in Newfoundland. *Newfoundland Studies* 8(2): 155-178.
- Neis, B and Felt, L (eds.). 2000. *Finding Our Sea Legs: Linking Fishery People and Their Knowledge with Science and Management*. Newfoundland, ISER Books.
- Neis, B., Haedrich, R., Hutchings, J., Schneider, D. C. 1999. An Interdisciplinary Method for Collecting and Integrating Fishers' Ecological Knowledge into Fisheries Management *In* Diana Newell and Rosemary Ommer (eds.) *Fishing Places, Fishing People: Traditions and Issues in Canadian Small-Scale Fisheries*. Toronto, University of Toronto Press: 217-238.
- Nel, D. C.; Cochrane, K.; Peterse, S. L., Shannon, L.J.; van Zyl, B.; Honig, M. B. (eds) 2007 Ecological Risk Assessment: A Tool for Implementing an Ecosystem Approach for Southern African Fisheries. WWF South Africa Report Series – 2007/Marine/002.
- Ommer, R. E. and the Coasts Under Stress research project team. 2007. *Coasts Under Stress: restructuring and social-ecological health*. Canada: McGill-Queen's University press.
- Parkington, J. E. 2006. *Shorelines, strandloppers and shell middens*. Cape Town: Krakadouw Trust.

- Peterson, S., Paterson, B., Basson, J., Moroff, N., Roux, J-P., Augustyn, J. and D'Almeida, G. (eds). 2010. *Tracking the Implementation of an Ecosystem Approach to Fisheries in Southern Africa*. WWF South Africa Report Series – 2010/Marine/001.
- Ponte, S. and van Sittert, L. 2006. The Chimera of Redistribution: 'Black Economic Empowerment' (BEE) in the South African Fishing Industry. *Danish Institute for International Studies*. Working Paper no. 32.
- Hara, M and Maharaj, I. 2003. *Marine-based Tourism in Gansbaai: A Socio-economic Study*. Programme for Land and Agrarian Studies (PLAAS). University of the Western Cape (UWC).
- Raemakers, S., Hauck, M., Bürgener, M., Mackenzie, M., Maharaj, G., Plagányi, E. E. and Britz, P. J. 2011. Review of the causes of the rise of the illegal South African abalone fishery and consequent closure of the rights-based fishery. *Ocean and Coastal Management*. 54: 433-445.
- Rand R.W. 1963a. The biology of guano-producing seabirds. 4. Composition of colonies on the Cape islands. *Investigational Report Sea Fisheries Research Institute South Africa* 43: 1–32.
- Rand R.W. 1963b. The biology of guano-producing seabirds. 5. Composition of colonies on the South West African islands. *Investigational Report Sea Fisheries Research Institute South Africa* 46: 1–26.
- Republic of South Africa. Marine Living Resources Act No. 18 of 1998. As amended by The Marine Living Resources Amendment Act 68 of 2000.
- Republic of South Africa. National Environmental Management Act No. 107 of 1998.
- Rittel, H. W. J. and Webber, M. M. 1973. Dilemmas in a General Theory of Planning. *Policy Sciences*. 14(4): 155-169.
- Rogerson, J J M. 2011. *Above the surface, beneath the waves: Contesting ecologies and generating knowledge conversations in Lamberts Bay*. Unpublished MA thesis. Department of Social Anthropology. University of Cape Town.
- Rohde, R.F., Hoffman, M. T. & Allsopp, N. 2003. "Hanging on a wire: A historical and socioeconomic study of Paulshoek village in the communal area of Leliefontein, Namaqualand." Programme for Land and Agrarian Studies, University of the Western Cape. (Research Report no. 17.)
- Roy C, van der Lingen C.D, Coetzee J.C, Lutjeharms J.R.E. 2007. Abrupt environmental shift associated with changes in the distribution of Cape anchovy *Engraulis encrasicolus* spawners in the southern Benguela. *African Journal of Marine Science* 29: 309–319.
- Schama, S. 2004. *Landscape and Memory*. London: Harper Perennial.
- Schultz, O. 2011. *Belonging on the West Coast: An Ethnography of St Helena Bay in the context of marine resource scarcity*. Unpublished MA thesis. Department of Social Anthropology. University of Cape Town.
- Scoones, I. 1999. New Ecology and the Social Sciences: What Prospects for a Fruitful Engagement? *Annual Review of Anthropology*. 28: 479-507.

- Scott, P. 1951. Inshore Fisheries of South Africa. *Economic Geography*. 27(2): 123-147.
- Shannon L.J., Crawford R. J. M. 1999. Management of the African Penguin *Spheniscus demersus* – insights from modelling. *Marine Ornithology* 27: 119–128.
- Small, C and Nicholls, R. J. 2003. A Global Analysis of Human Settlement in Coastal Zones. *Journal of Coastal Research*. 19(3): 584-599.
- Sowman, M.; Hauck, M.; Lance van Sittert, L.; Sunde, J. 2011. Marine Protected Area Management in South Africa: New Policies, Old Paradigms. *Environmental Management*. 47: 573–583.
- Steinberg, J. 2004. *The number: one man's search for identity in the Cape underworld and prison gangs*. Cape Town: Jonathan Ball.
- 2005. The illicit trade of abalone in South Africa. *Institute for Security Studies*. Paper 105.
- Sunde, J. and Isaacs, M. 2008. *Marine Conservation and Coastal Communities: Who Carries the Costs? A Study of Marine Protected Areas and Their Impact on Traditional Small-Scale Fishing Communities in South Africa*. Chennai, India.
- Tunley K. 2009. State of Management of South Africa's Marine Protected Areas. WWF South Africa Report Series – 2009/Marine/001.
- United Nations Industrial Development Organization. 2007. *Africa Foreign Investor Survey 2005*. Vienna, Austria.
- Van der Merwe, L. d. J. 1979. 'n Uitvoerbaarheid Studie oor die Ekonomiese Inmaak Moonlikbede van Pelagiese vis te Gansbaai. Technical report (MBA), University of Stellenbosch.
- Van Sittert, L. 1995. 'The Handmaiden of Industry': Marine Science and Fisheries Development in South Africa 1895-1939. *Studies in History and Philosophy of Science*. 26(4): 531-558.
- 2002. Leviathan Bound: Fisheries Reform in South Africa, 1994-2001 In Lemon, A. And Rogerson, C. M. (eds.) *Geography and Economy in South Africa and its Neighbours*. Pp. 45-62.
- 2003. "The tyranny of the past: why local histories matter in South African Fisheries" in *Ocean and Coastal Management*, 46. pp 199-219.
- 2006. "Those who cannot remember the past are condemned to repeat it": comparing fisheries reforms in South Africa. *Marine Policy*. 26: 295-305.
- Van Zyl, M. *Heritage and Change: The implementation of fishing policy in Kassiesbaai, South Africa 2007*. Unpublished MA thesis. Department of Social Anthropology. University of Cape Town.
- Watermeyer, K, E., Shannon, L.J., Griffiths, C. L. 2008. Changes in the trophic structure of the southern Benguela after the onset of industrial fishing. *African Journal of Marine Science*. 30(2):1-31.